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## PROPOSED PHILADELPHIA PARKWAYS

**Counteracting Baneful Effects of the "Grid-Iron Plan" for Streets—Work of Public Spirited Citizens and Associations—Will Give City the Lead in Park Area**

By *Andrew Wright Crawford*

DURING the last two or three months a notable impetus has been given to the movement for securing parkways in Philadelphia. Since 1888 that city has done a considerable work toward making up for the lack of foresight of former generations, and has secured thirty-seven small squares or parks; but there is not a single street that can be called a park road. The original plan of the city, which was drawn up by William Penn, shows an utter want of knowledge of the use of diagonal streets. He provided a generous proportion of open space or squares, a proportion that, if carried out in enlarged Philadelphia, would have given it two hundred and eighty small parks instead of the forty-seven that are actually in existence; but not a single diagonal relieved the monotony of the straight streets and rectangular blocks which Penn laid down for his city's two square miles of territory, lying between the Delaware and Schuylkill Rivers. This want of parkways and of diagonal avenues is beginning to be appreciated by the city authorities, as well as by the public, and ordinances to put two great parkways on the City Plan have been enacted, and two others are receiving considerable attention. All these parklike avenues are also diagonals, so that Philadelphia is planning to make two distinct improvements, in each case, at one and the same time.

### THE FAIRMOUNT PARK PARKWAY.

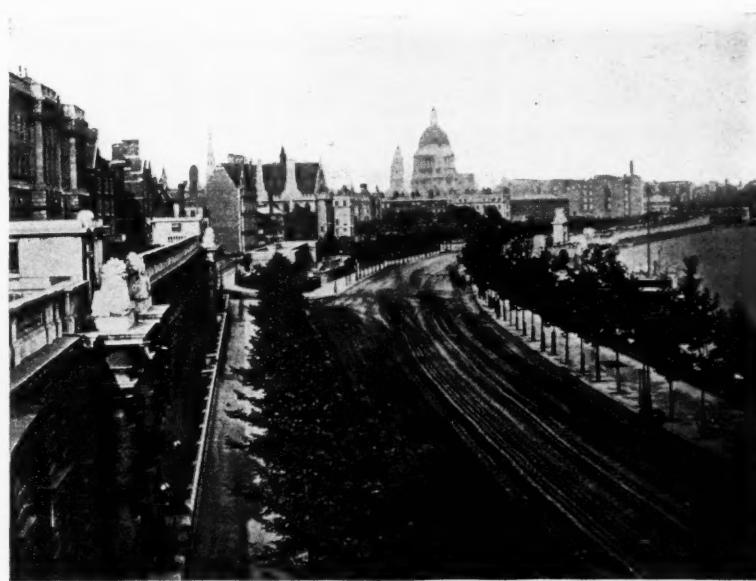
Reference has already been made in the MUNICIPAL JOURNAL AND ENGINEER to the revival of the movement to secure a direct approach from the City Hall to the entrance to Fairmount Park, a distance of about a mile. In order to reach the Park from the center of the city it is now necessary to follow the two sides of a right-angled triangle instead of taking the hypotenuse, the result that the gridiron system always entails. Among the last acts of Mayor Ashbridge's ad-

ministration was the best, namely, the passage of an ordinance to place a diagonal approach to the park upon the City Plan. The construction of this approach, on the lines stated in the ordinance, will be the greatest case of Haussmanization that has ever been undertaken by any city in North America, and perhaps as great as the construction of May Avenue in Buenos Ayres, Argentina.

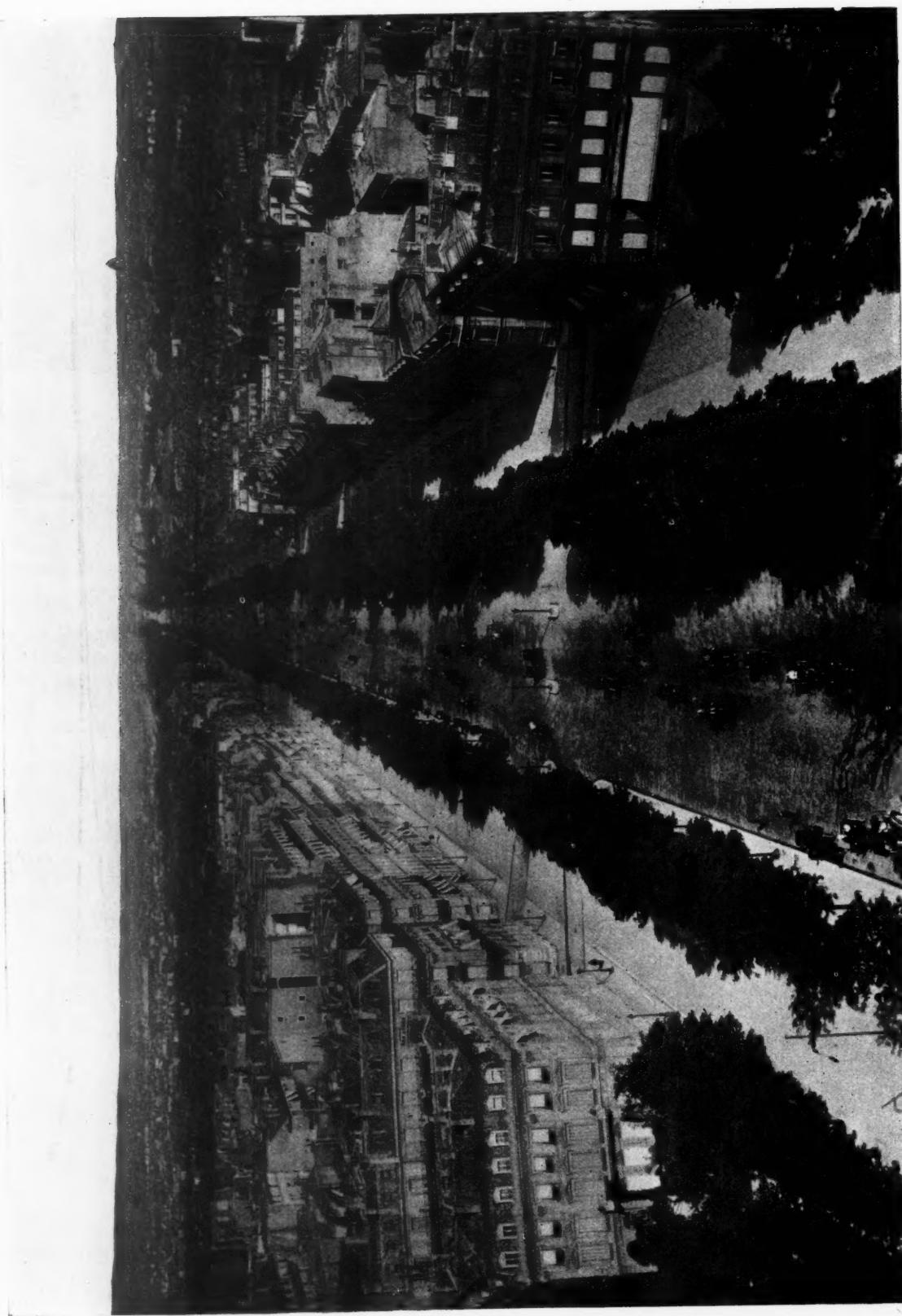
The first third of the parkway is to be one hundred and sixty feet in width. At its beginning, opposite the City Hall, a plaza is plotted, with an area equal to a square and a quarter, in a slightly irregular shape. On the north side of this plaza, covering an additional quarter of a square, the central public library may be erected. Thus the Pennsylvania Railroad Station, the monumental City Hall and this proposed library will be the architectural features at the southwestern termination of the parkway.

The southeastern corner of Logan Square, one of Penn's original parks, is a third of the way toward Fairmount Park. Around both sides of this square, or possibly directly through it, the parkway will continue to its northwestern corner, whence it continues in precisely the same direction, but widened to three hundred feet, for another third of a mile. It is then to be enlarged even more, to a total width of five hundred feet, with a still larger plaza directly at the entrance of the Park. The Fairmount Park Reservoir, which now is one of the features of the entrance, will probably be given up as a site for a great art gallery, and, opposite it, facing on this broad plaza, one of the Carnegie branch libraries may be located.

Philadelphia promises to set an example to all the other cities of this country, because this park road, looked at in one way, will form an approach to the chief park of the city, and, viewed in another, will bring that park to the

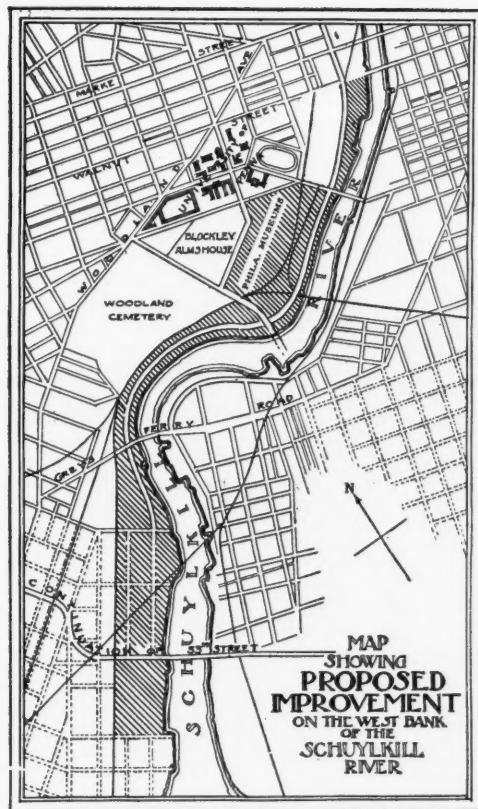


THE THAMES EMBANKMENT, LONDON



A SUGGESTION FOR THE PHILADELPHIA PARKWAYS  
THE AVENUE DES CHAMPS ELYSEES LEADING TO THE BOIS DE BOULOGNE, PARIS

*From the Parkway Brochure*



copies of a superb brochure issued by The Parkway Association, which was formed for the sole purpose of urging the construction of such a boulevard, were distributed. Through the courtesy of The Parkway Association, we are enabled to reproduce some of their illustrations.

#### THE TORRESDALE PARKWAY.

Philadelphia extends for many miles along the Delaware River, now including what were formerly separate towns and villages with the city proper. An ordinance was passed in the last month of last year to put upon the City Plan a parkway three hundred feet wide, stretching from Broad Street near Hunting Park, the largest park in the northern portion of the city, to Torresdale, a distance of over ten miles. A second ordinance, providing for the actual construction of the first mile, was passed about April 1st. The parkway will leave Broad Street at a point four and a half miles north of the City Hall, touch immediately the northern boundary of Hunting Park, and then turn in a northeasterly direction, generally following high ground in order to avoid all grade crossings of the lines of railroads which cut up the northern portion of the city. The new avenue cuts the gridiron system of streets, which has unfortunately not been confined to the original limits of Penn's city, in an oblique direction, and will be a main avenue for traffic of all kinds.

About a mile and a half after leaving Broad street it will bridge the very pretty value of Frankford Creek, one of the larger streams that empty into the Delaware. About three-quarters of a mile southeast of the point where this avenue crosses the creek, one of the larger city parks, Juniata Park, which is very extensively wooded with fine, old trees, is situated. It has been proposed that the valley of the stream, which is fairly narrow, be preserved as a park, thus bringing Juniata Park into natural relation with the Torresdale Parkway; and the Board of Surveys is at work plotting along the crests of the sides of the valley streets that will form the natural boundaries for such a connection.

The Torresdale Parkway, within about three-quarters of a mile of Frankford Creek, passes near Northwood Park, which may be extended to and along the line of the parkway, making a park some fifty acres in extent. This is especially desirable, because Northwood Park is easily accessible from one of the largest manufacturing districts of Philadelphia, so that it would form a

city's center. It can scarcely be a matter of surprise that many citizens are impatient over the slight opposition to the expenditure of about \$7,500,000 for this tremendously valuable result. It is a great project, and has the backing of leading individuals, political organizations and voluntary associations, such as the T-square Club, the Fairmount Park Art Association, and The City Parks Association. The Fairmount Park Art Association gave up its annual meeting to speeches upon the subject, when

splendid playground for the workmen and their children, who are employed and live there. Much of this additional ground is also well wooded.

It is one of the best features of this avenue that it traverses ground which has not been developed for building purposes, although it frequently passes near territory already occupied by rows of city houses. But this undeveloped character gives opportunities for a number of parks along it, and the most desirable of all is offered by the valley of the Pennypack Creek. An ordinance has just been introduced to take for park purposes this entire valley for a distance of six miles, with an area of nearly a thousand acres. At about its middle point it will be bridged by the Torresdale Parkway. Some of its admirers claim that the Pennypack valley out-rivals even that of the Wissahickon Creek; and the Secretary of the Metropolitan Gardens Association of London, England, declared that the latter is the most beautiful drive near any great city in the world. Its beauty is certainly unrivaled in this country, and if Philadelphia can preserve two such creek drives it will be wonderfully favored. So far, the Pennypack valley has not been threatened by building operations; but this new parkway will make it available for such purposes unless this far more desirable use is determined upon for it. The ordinance is well-timed, and it is hoped that Councils will act upon it promptly. It would make a delightful objective point for people using the electric line, which is to be built either on or under the surface of the parkway.

Hunting Park, which marks the beginning of the parkway, may be extended north of it and also eastward to Broad street, giving the park an area of approximately one hundred acres. The extension is strongly advocated by The City Parks Association of Philadelphia, an organization which was incorporated in 1888, and through whose efforts many of the new parks and squares have been secured. The association points out that Hunting Park is used more than any other in the city, and that its present forty acres do not give the room that is really necessary.

Hunting Park avenue runs diagonally from a point near Hunting Park southwesterly to the River Drive of Fairmount Park. It is now to be continued to the point where the Torresdale Parkway touches Hunting Park, and the two will thus form a great diagonal avenue across the whole northern portion of the city. Belfield avenue will be continued for about the same distance to the same point, and will form a diagonal connection with the northwestern portion of Germantown, the largest of Philadelphia's suburbs. Belfield avenue, moreover, runs within a half block of Stenton Park, formerly the homestead of General Logan of Revolutionary fame.

A few diagonal avenues, as has been indicated by the mention of



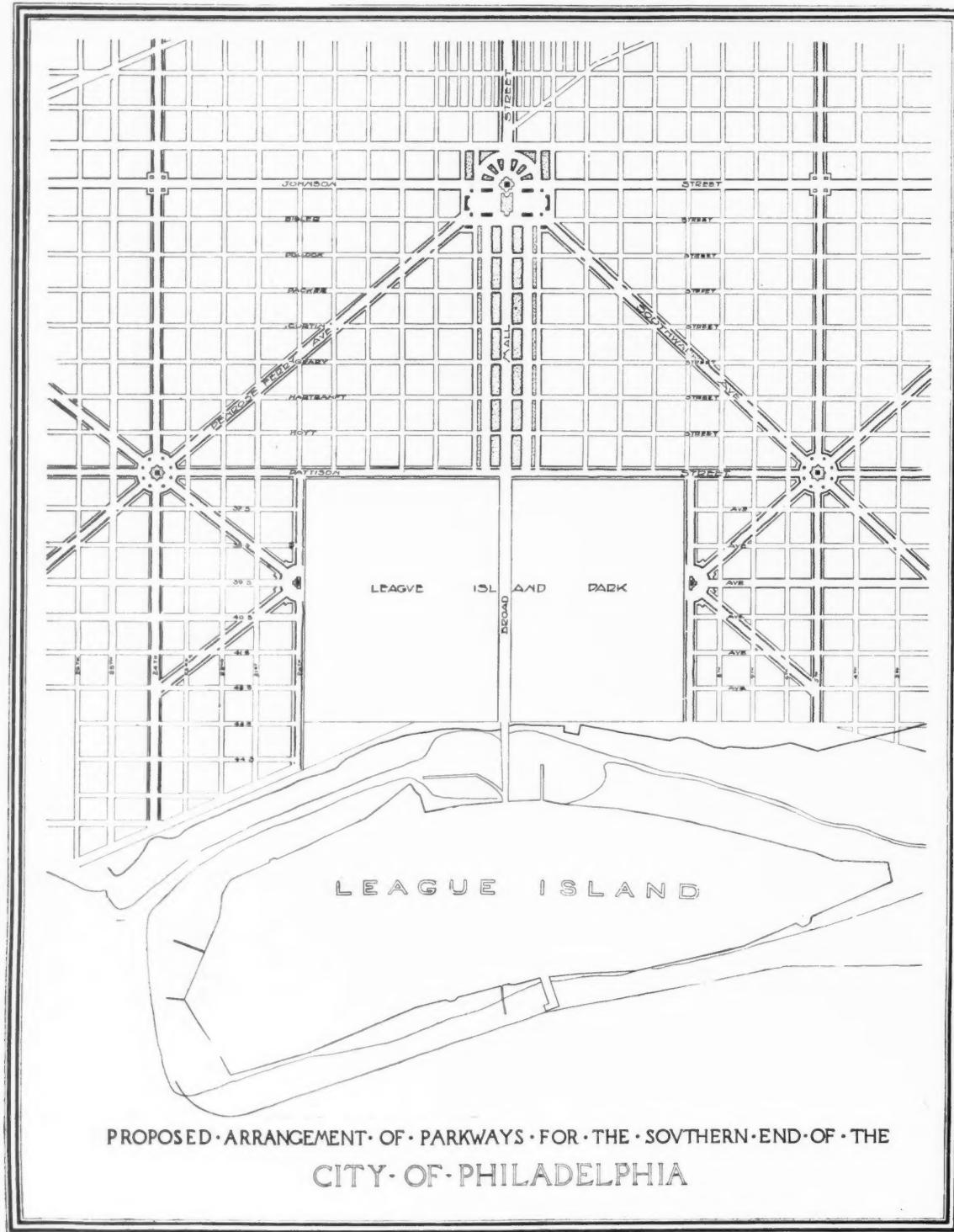
VICTORIA EMBANKMENT GARDENS, LONDON

Hunting Park avenue and Belfield avenue, have managed in one way or another to secure a place upon the City Plan, usually because they mark direct means of communication between the original city of Philadelphia and formerly separate towns. These diag-

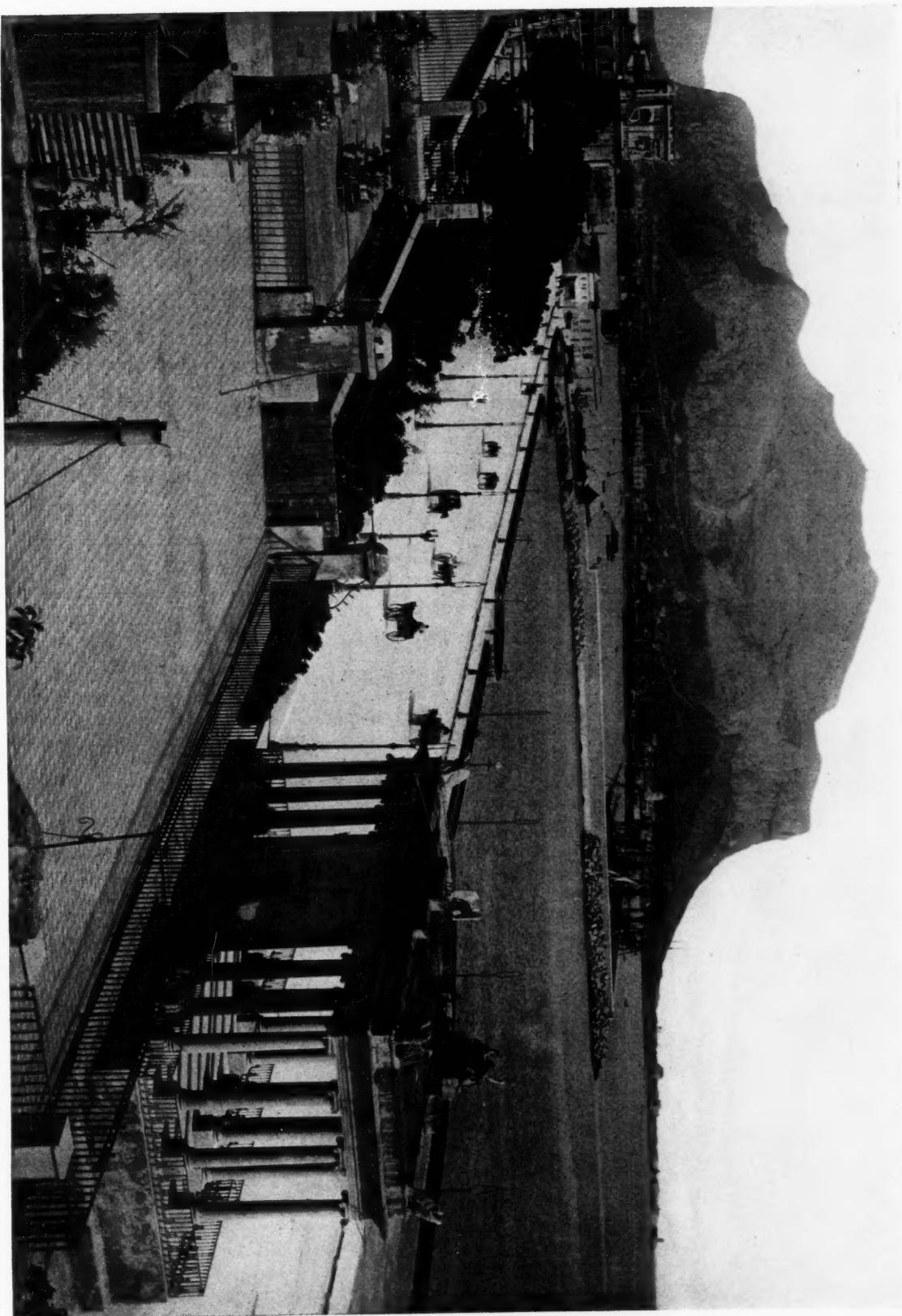
onal streets have presented quite a number of opportunities for small triangular parks, green spots to whose existence other cities owe so much of their attractiveness. Philadelphia, therefore, cannot plead want of opportunity in this regard, and has no excuse to offer for the fact that on the first of this year she had upon her City Plan but seven parks under one acre in extent, as against New York's seventy-two, and Washington's surprising number of two hundred and seventy-five, most of which are triangular in form. Philadelphia has apparently determined to correct this mistake, and in connection with this parkway four small triangular parks have been placed upon the City Plan.

A yet more notable movement has been initiated in connection with this one parkway, marking a distinct departure. At the present time Philadelphia cannot boast one circular park in existence. The circles of Washington are perhaps more responsible for its beauty than any other individual feature of Washington's City Plan. At

the point of departure of the Torresdale Parkway from Broad street, a circular space three hundred feet in diameter, with a point in the middle of Broad street as its center, has been placed upon the confirmed City Plan. The central portion of Broad street is reserved for a grass plot eighty feet in diameter—an exceptionally fine site for a monument. At the point where Hunting Park avenue and Belfield avenue meet at or near the centre of the parkway, another circular grass plot, of the same area, has been placed on the plan. These two circles are but a few hundred feet from each other, and this entire space seemed especially adapted for architectural treatment. The problem of what to do with it was given by Mr. Frank Miles Day, the well-known architect, who is one of the managers of the City Parks Association, to the students at the Academy of Fine Arts and some genuinely admirable results were obtained. It was remarked at the time they were exhibited that such results can only be secured where the system of diagonal streets is adopted.



PLAN PREPARED BY MR. FRANK MILES DAY AND PUBLISHED IN A SPECIAL REPORT ON THE CITY PLAN, BY THE CITY PARKS ASSOCIATION OF PHILADELPHIA



A SUGGESTION FOR THE WEST BANK OF THE SCHUYLKILL, PHILADELPHIA  
THE MARINA OR FARO ITALICO AT PALERMO

*From the Parkway Brochure*

The rectangular system simply does not offer such opportunities. A yet larger circle, five hundred feet in diameter, with a circular park in the middle, which will probably be three hundred feet in diameter, will be located not far from Northwood Park, which has already been spoken of. This has been determined upon. It will thus be seen that by this one parkway an outer park system has been begun, and that this one link offers great possibilities of development.

#### SOUTH PHILADELPHIA PARKWAYS

Next to Fairmount Park the largest park that Philadelphia has is League Island Park, at the foot of South Broad street. Its outline is square and it covers three hundred acres. South Broad street is the natural approach to this park, and an ordinance has been passed to make it one hundred and sixty feet wide from a point about a mile north of the park to the park itself. Three rows of trees and grass are provided for, dividing the roadway into four sections, two to be asphalted for general traffic, and two for macadamized roadways. The sidewalks, which are to be twenty-two feet wide, will doubtless not be given altogether to the footways, but space left for grass plots dividing the footways from the house lines and the roadways.

A more comprehensive plan has been under consideration by a committee of Councils, one that will provide a system of diagonal parkways for South Philadelphia. This section is low-lying land,

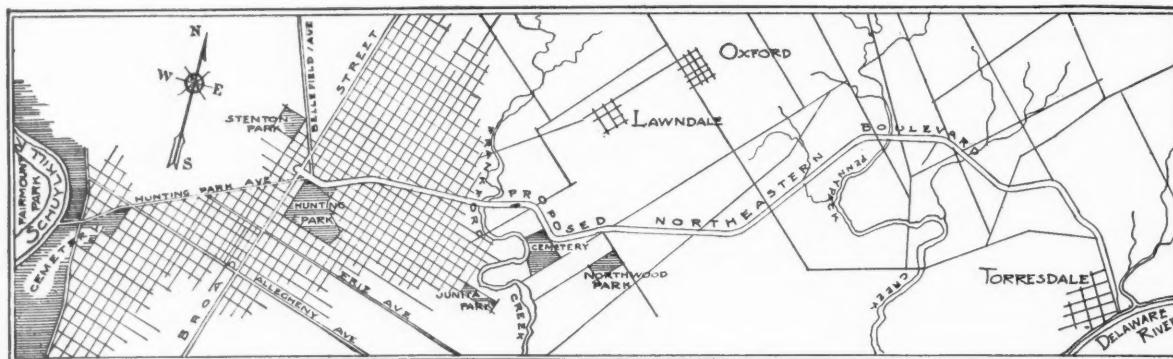
ways, but also connecting links between Philadelphia's two principal parks and two of the parks that preserve two of her most historic residences.

#### NORTH BROAD STREET

When the ordinance to make South Broad street one hundred and sixty feet wide had been passed, The City Parks Association urged, in an open letter to Councils, that the same plan be followed for North Broad street from the intersection of Old York road and that street, to the city limits. It urged that as Broad street is Philadelphia's principal street, it should be made worthy of its name. Moreover, south of that intersection for several squares, a narrow strip of land, averaging about one hundred feet in width, divides Old York road from Broad street, and the association urges that this strip be taken for park purposes, to the great improvement of both the bordering avenues. The latter idea has already been approved by the Board of Surveys, the newspapers have given the plan most favorable consideration, and there seems to be a fair chance that the recommendation will finally be adopted.

#### COBB'S CREEK PARK

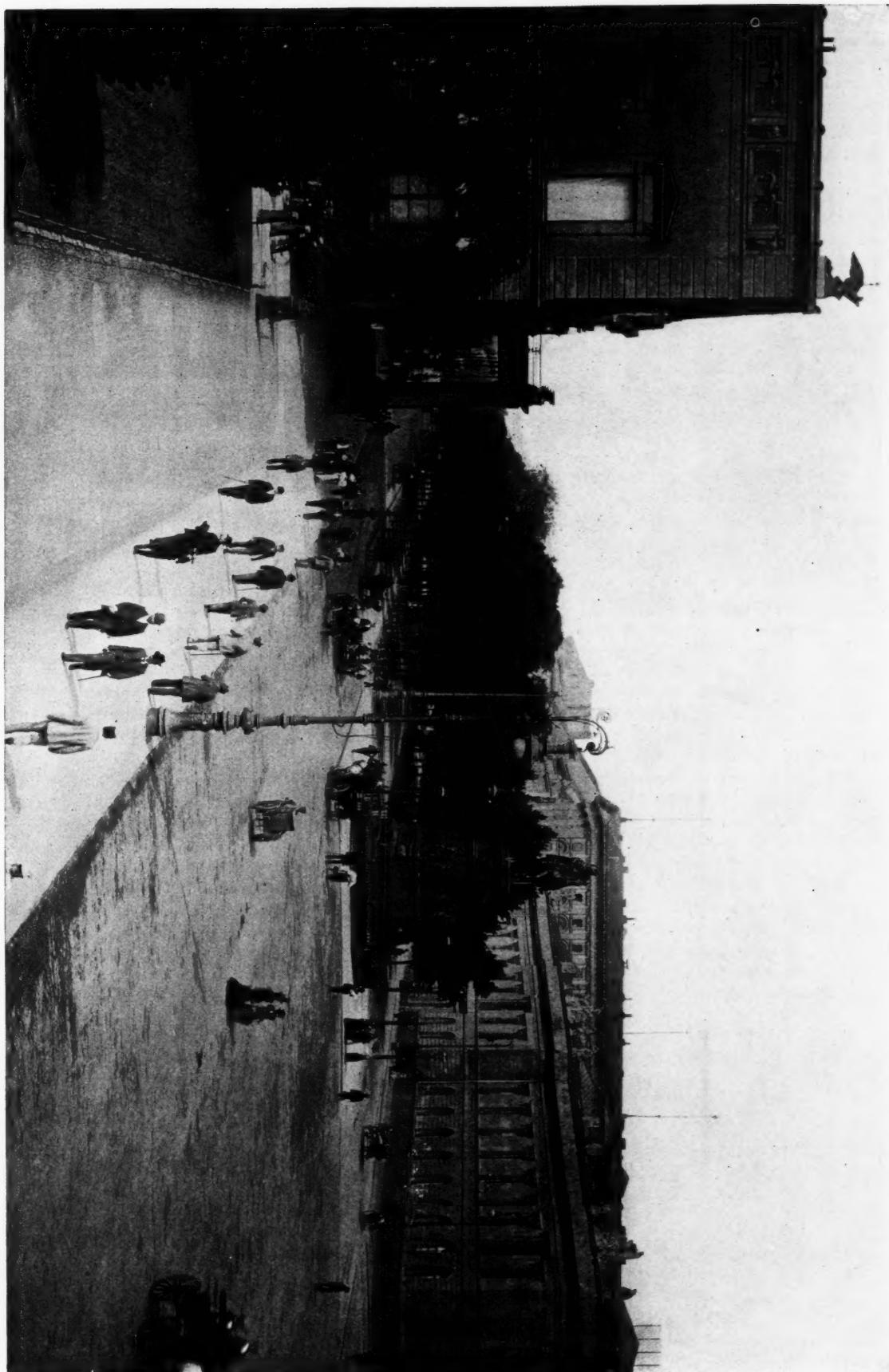
The Torresdale Parkway and the proposed widening of Broad street will make some provision for Northeast and North Philadelphia; the Fairmount Park Parkway will add particularly to the attractiveness of Northwest Philadelphia, as well as mark a great



THE NORTHEASTERN OR TORRESDALE PARKWAY

all of which will have to be raised artificially for the purposes of the sewerage system. The City Parks Association, in a pamphlet on the City Plan, published a scheme for this undeveloped portion of the city, which was drawn up by Mr. Frank Miles Day, and which is herewith reproduced. An ordinance, which has been considered favorably by a sub-committee of Councils, has adopted the main features of this plan. The ordinance contemplates the construction of a plaza covering four squares about a mile north of League Island Park, the center of the plaza being marked by the intersection of South Broad street, with an east and west street, called Johnson street. From the southern side of this plaza to the park the ordinance provides for widening Broad street to a width of three hundred feet. From the center of the plaza a street running southeasterly in an exactly diagonal direction will lead to the Delaware River. It is to be one hundred and eighty feet wide. From the same point another diagonal avenue, of the same width, will run southwesterly to the Schuylkill River. A third diagonal avenue has been added to the plan proposed by Mr. Day and will run from the same intersection northwesterly, passing Stephen Girard Park, a portion of the farm, including the homestead, of the most famous philanthropist of the early part of the nineteenth century. Within a mile or so of the latter, the parkway will cross the Schuylkill River on the northern line of Bartram's Garden, a park that preserves the house and beautiful gardens of one of the most famous horticulturists and travellers of the early part of the eighteenth century. From this point one of the main avenues of West Philadelphia leads past a new city square to Fairmount Park, some distance away. Thus this plan provides not only diagonal avenues and park-

advance for the whole city; the proposed South Philadelphia Parkways will embellish that portion of the city in a way that is emphatically needed; and the proposed park that I am about to consider will preserve the most naturally parklike feature of West Philadelphia. Cobb's Creek marks the city limits in a westerly direction. For some four miles in length, from Paschallyville to City Line avenue, it runs through a narrow valley, and in some portions suggests the picturesque, rural scenery that one finds so often in England. Its sides are not so bold as the valleys of the Wissahickon and the Pennypack, but its charm, though of a different character, is very genuine. The City Parks Association has strongly urged that this valley be preserved throughout as a park, connecting with it one or two large wooded areas that have not been spoiled as yet by building operations. The project came indirectly before the Board of Surveys on the discussion of an ordinance which provides for constructing a street that throughout a large part of its length would be the natural eastern boundary of the park. The Board evinced a desire to lay it out as such a boundary, and for the greater portion of the distance the location as proposed was agreed to by the managers of the City Parks Association; but the gridiron system, which had an ironclad hold upon previous Boards of Surveys for two hundred years, still, necessarily, exerts considerable influence, and for about a half mile the Board desires to keep, as the boundary, a perfectly straight street that has been upon the City Plan for years. The City Parks Association offered an alternative route which would preserve the sides of the valley more completely, though adding slightly to the area of the proposed park. As this valley is a considerable distance from Fairmount Park, that addition seems a dis-



*The Statue of Frederick II*

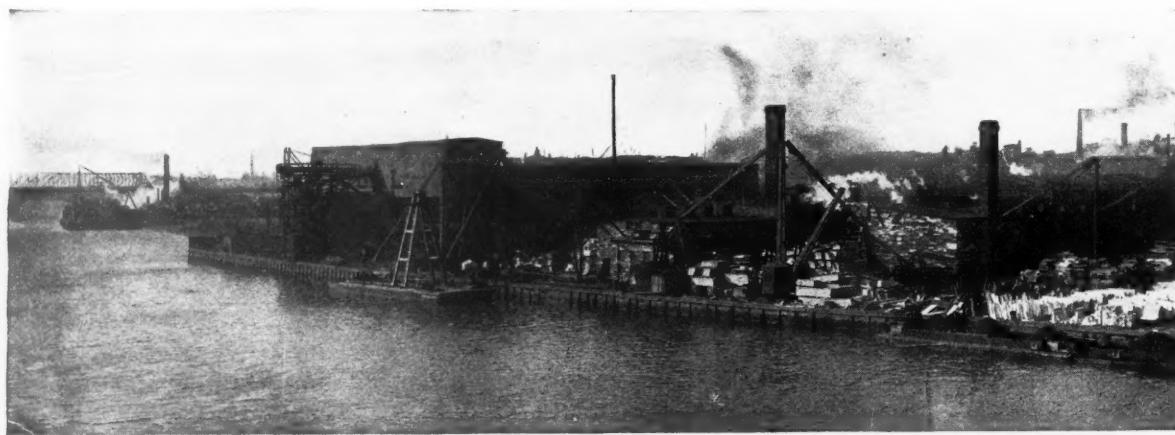
*The University*

A SUGGESTION FOR THE PHILADELPHIA PARKWAYS  
ENTRANCE TO UNTER DEN LINDEN, AT BERLIN, FROM THE PLAZA BEFORE THE OPERA HOUSE

*From the Parkway Brochure*

tinctly desirable feature of their suggestion. A year ago the Association issued a pamphlet upon the City Plan that received lengthy editorial notice in the *MUNICIPAL JOURNAL AND ENGINEER*, coming as it did from an organization of the city which has been the prototype for all rectangular systems of streets, and which has exerted such a baleful influence upon other cities and their officers, notably the Commissioners of 1809 of New York City. The condemnation of the whole gridiron system in the text of the pamphlet was perhaps severe enough, though certainly warranted; but far greater in effect were the irrefutable arguments made by the illustrations, reproduced from photographs, which showed graphically the results of the rectangular system in unnecessary cuts and fills. It is seldom that one finds a more remarkable example, from a purely engineering point of view, of the advantage of a system that follows the

authorities in one way or another. An agitation for a different improvement, one that has slumbered for a number of years, has just been publicly revived, and the time seems ripe for its realization. This is the plan for a river drive along the Schuylkill's west bank from Walnut street south to Bartram's Garden, where it would intersect with the South Philadelphia Parkways already described. An illustration presented herewith shows a view of the bank as it is to-day, and other illustrations show what other cities have done with the shores of their rivers. The length of the drive would be about two and a half miles, two-fifths of which have already been taken for park purposes. For a half mile the channel of the river would have to be shifted in order to give room for the drive between a railroad and the water. Precedent for this has been set by London, where the famous Thames embankments



THE WEST BANK OF THE SCHUYLKILL, BELOW WALNUT STREET, AS IT APPEARS TO-DAY

contours of the land as opposed to the disadvantages of the gridiron system than is shown by the route suggested by the officers of the Association for this half mile of the eastern boundary of the proposed Cobb's Greek Park, as against the line plotted years ago. The latter would have necessitated two fills of twenty feet each, which would have been a portion of the eastern limits of the park. Moreover, there would have been a grade of four per cent. for a distance of about four hundred feet. The alternative plan would have compelled a maximum fill of but three feet and a maximum cut of five feet (and this would have been on the eastern side of the eastern boundary of the park); and the greatest grade would have been about two and two-tenths per cent. The matter is still under advisement, but all are agreed that the preservation of the valley is of the utmost consequence to the present and future of West Philadelphia.

#### WEST RIVER DRIVE

The projects thus far discussed have all been before the city au-

were constructed by encroaching on the river throughout the length of four and a half miles, the cost being over eleven millions of dollars.

It will thus be seen that Philadelphia bids fair to undertake the somewhat difficult task of once again securing the lead which it held for so long in the matter of its park acreage. Philadelphia's project for an approach to Fairmount Park, and Washington's project for removing all the houses south of Pennsylvania avenue, in order to secure a continuous park between the Capitol and the White House, are the two most notable improvements contemplated by any American cities within their built-up areas. While the suggestion for the fitting improvement of the nation's capital must command the greatest amount of attention and patriotic enthusiasm, yet the initiative that Philadelphia promises to take is a noteworthy one for the precedent it will set. And the Philadelphia plan for improvement seems surer of early realization than the one that must await the action of slow-moving Congress.



## MUNICIPAL OWNERSHIP CONVENTION

**Pros and Cons of Public Ownership Discussed by Men of International Reputation—  
Situation in Great Britain, by the Editor of The Municipal Journal, London**

(Continued from April)

By Robert Donald

### REASONS FOR MUNICIPALIZATION

One of the elements which helped forward the municipalization movement was the bad management of companies. They allowed their undertakings to become dilapidated toward the latter years of their leases. They were only concerned in making a general scramble to pay as much in dividends as possible. They paid their workmen so disgracefully that there were serious strikes in several cities, interrupting traffic. The cars were dirty, the horses bad, the service irregular, and in Glasgow, Liverpool, Leeds and other cities there was general discontent at the incapacity of the tramway companies and the inefficiency of the service provided. In some towns the companies broke down altogether.

It is continually said that the Act of 1870, limiting the life of the companies to twenty-one years, retarded electrification to the great injury of electrical engineering, etc. We can only speculate on that subject. We have nothing to show that companies would have introduced electric traction sooner had the principle of municipal ownership not been there. Judging by analogy I should say that electric traction has been little retarded if at all. Private enterprise did not show any desire to introduce horse tramways. English railway companies are only just beginning to think of electrifying their suburban lines. British manufactures in all branches of engineering have fallen behind American invention, initiation and enterprise.

The first town to operate as well as own tramways was Huddersfield. No company would undertake to provide tramways in the town, which has very steep streets. The municipality obtained power from the Board of Trade to work the tramways if no company made a reasonable offer to work the lines. No offer came forward, and the municipality since 1881 has worked the tramways. Horse traction was tried and then steam. Many accidents happened to the engines and the municipality had to pay heavy compensation, but was quite ready to make up the deficiency. The benefit to the population of this hilly town from cheap rapid transit was worth more to them than the subsidy from local taxation.

Plymouth Town Council was obliged to work the tramways itself owing to the failure of a company. The lines had not only been badly laid, but they were in continual need of repair. There was endless wrangling and difficulties with the company, finally ending in the municipality acquiring its rights in 1892. No other company came forward with an offer to work the tramways and the municipality proceeded to do so itself. This is one of the most striking examples in favor of municipal ownership. The municipality at once put on new cars, obtained better horses and spent £42,000 on reconstructing the system. The result was that the traffic was promptly doubled and the service vastly improved. The motives which actuated the municipality in their enterprise are recorded in the minutes of the Corporation, as follows:

"The main objects of the corporation in purchasing the tramways were to get rid of the company management, which had failed to give the public an efficient tramway service and which had exhibited so considerable disregard of public inconvenience and remonstrance, and in the second place to place the direction and control of the policy of the tramway extension in the hands of the Council; as representing the general body of ratepayers, for the general benefit of the borough instead of leaving the tramway system to be developed and extended for the purpose of securing profits to shareholders without regard to local necessities."

Blackpool, a popular seaside resort in Lancashire, has worked its tramways since 1893 and was the first town in England to install the conduit system. It afterwards removed it, owing to the interruption of the service caused by water.

The inefficiency of the tramway service in Leeds long caused dissatisfaction, and in 1894 the Corporation took over the undertaking and began to operate it, working it partly by horse, partly by steam and partly by electricity.

When the limited franchises granted by the Act of 1870 began to expire, almost without exception all the great municipalities decided to exercise their powers under section 43 of that Act and acquire the undertakings at their depreciated value. Before a council can do this, it is necessary not only for a majority of votes to be recorded in favor of purchase, but for two-thirds of the members to be in the council chamber. Several grotesque attempts have been made by reactionary members to stay out of the room in order to defeat purchase, but the pressure of public opinion and the ridicule cast upon them invariably brought them into line.

From a commercial point of view, there was not great advantage in having to pay only a moderate price for the plants. The towns have paid what the lines and equipment were worth as they stood, but as, in most cases, they had at once to reconstruct the lines and to discard the horse equipment for electric traction, it would have been cheaper in the end to have built new lines. The fact that conversion has had to follow purchase—almost immediately in most cases—has naturally increased the administrative difficulties. The municipalities had to undertake a new service, lay down new lines and introduce a new system with as little interruption to traffic and with as great a saving of capital expenditure as possible. A town like Dover, which started right off with electric traction, had a decided advantage.

In this transition period, when lines are being continually reconstructed and extended, it is difficult to make comparisons between municipal and company operations. I am able to give, however, one interesting comparison between municipal and company management of the same system, which is found in Sheffield. The Sheffield City Council decided to purchase the company's tramway undertaking in 1895. The company was unpopular, its service was bad, but it hoped at the last moment to defeat the municipality. A standing order was still before the House of Commons prohibiting municipalities working tramways. But the Sheffield Corporation succeeded in getting rid of that standing order just in time. Sheffield took over exactly the same system, with the same staff, etc., as the company had. It at once proceeded to improve the service, to link up connections and reduce fares. The following is an interesting comparison between the last twelve months of the company's operation and the first twelve months under the Corporation:

Company's Last Year, ending 30th June, 1896.	Corporation's 1st Year, 11th July, '96-30th July, '97.
9 692.855	Approx. street miles of tramways (double lines) 9
6,566,033	Number of miles run..... 733,262
£39,995 2s. 4	Receipts from passengers..... 8,453,078
13.85s.	Receipts from passengers per mile run..... £46,517 2s. 4
£4,443 18s.	Receipts from passengers per street mile of tram'y 15.22s.
34.48	Average number of cars running daily..... £5,168 11s. 4
3,621	Average number of passengers per car per week..... 36.48
£22 1s. 1	Average receipts per car per week..... 4,569
312	Average number of horses..... £25 2s. 10
9s. od.	Average cost of forage per horse per week..... 340
	7s. 9½d.

It will be noticed that on the same system nearly two million more people were carried by the Corporation, and that the reduced fares led to increased receipts. It should also be noticed that the increased wages bill amounted to £2,423. By studying the interests of the over-worked staff which it took over, the City Council also promoted the comfort of the passengers.

### DELAY IN ADOPTING ELECTRIC TRACTION

It is frequently stated that the Tramways Act of 1870 not only delayed the introduction of electric traction, but is also responsible for the backward state of the electrical engineering industry in this country. It is pointed out that much of the electric plant now used in England is of American manufacture, and the opponents of municipal ownership blame municipalities for thus injuring British manufac-

ing industries. These statements, as a matter of fact, are entirely beside the mark. The backward state of electrical engineering in England—the fact that electrical manufacturers were not ready to supply the home market—has nothing to do with municipal ownership. American manufacturers are supplying machinery in all branches of British industry. Every shoe manufactory has to rely on American machinery. The Post Office goes to Chicago for its telephone instruments. The Morgan-Gardiner Co. of the same city are now equipping hundreds of mines in England with electrical coal cutting machinery. American labor saving machinery and machine tools are everywhere. They are all of American invention as well as of American manufacture.

When the boom in electric traction came along, the American manufacturers were ready to supply the market; the British manufacturers were not. It was just the same when, a few years ago, American manufacturers anticipated the great boom in cycles and flooded the English market with machines. It did not require great perspicacity to perceive, eight or nine years ago, that in a very short time street railways in British cities would be electrified, whether the municipalities exercised their option to take control or whether the company system continued. The electrical manufacturing engineers did not rise to the occasion. They were not ready to supply the demand. Consequently the first orders for electrical plant had to be sent to America and Germany, and the British manufacturers are still unequal to supply all existing demands.

While tramway legislation is not responsible for the backward state of English engineering enterprise, there is no doubt that it did somewhat retard the introduction of electric traction. There are, however, many compensating advantages for the few years' delay, for the towns which exercise their option under this measure will have absolute control over the streets in the future. There will no longer be vested interests, no questions of franchise, no trouble with wealthy companies seeking to gain control in local politics.

#### LONDON TRAMWAYS

The advantages of municipal ownership, even when it does not involve direct working of the tramways, are considerable. The municipality in leasing its lines at a yearly rental imposes terms, it regulates fares, provides for workingmen's cars and fair treatment for employes. This has been admirably illustrated in the case of the London County Council and the North Metropolitan Tramway Company. The Council acquired this company's system under the Act of 1870, but gave it a new lease until 1910. Under the old conditions the company paid no franchise and was under no control. It went on comfortably paying itself 10 per cent. or more, but made no effort to improve its system or study the public. Under the new conditions the company pays the council \$225,000 a year, and 12½ per cent. of the increase in receipts. It must set aside \$180,000 a year to maintain and reconstruct the lines. Fares must not be raised, and workingmen's trams at low fares must be run up to 8 a. m. The hours and wages of the employees must not fall below the best treatment of the employees on any company's system in London. The company must recognize trade unions and has been fined because it dismissed some employees on the ground that they were members of a union.

Undoubtedly the County Council made a good bargain financially with the North Metropolitan Company. Compared with the council's own tramways south of the river, the rental of the north lines makes a return on the capital of 4½ per cent. as against 3½ per cent., taking the reserve into account, obtained from the south system. On the other hand, the average fare on the municipal cars is .88d., as against 1.12d. on the company's. One-cent fares are introduced on the council's tramways, and 50,000,000 of workers are carried annually at this rate, thereby saving them over £100,000 a year. The employees are better treated; there is no friction as has existed on the North Metropolitan system.

In other cases agreements have been made between companies and municipal authorities for leasing tramways owned by municipalities. The municipality provides the capital, constructs the tracks, and the company provides the equipment. The company pays the municipality sufficient interest to liquidate its loan within the period of the lease and also a share of the surplus profit. For instance, a company has entered into arrangement for working the electric lines in the west and northern suburbs of London for a period of forty years. The

company pays the municipality 6½ per cent. on the expenditure, and the balance of net profit is divided between the two in the proportion of 45 per cent. to the municipality and 55 to the company.

#### FARES ON AMERICAN AND BRITISH TRAMWAYS

Many comparisons are made between the system of fares on American and British street railways. The American system has been adopted on the Central London electric underground railway, where a uniform 4-cent fare is charged. This line is chiefly used for long-distance traffic. The system which is preferred in England is that of cheap fares for short distances. It will be found, I think, that while America gives many examples of long distances at cheap fares the profit of the street railway companies comes chiefly from the short-distance passengers. For one person who wants to travel a long distance ten want to travel short distances. The long-distance journeys are only performed by people going to and coming from town. Experience has proved that what is most needed in British towns is a low fare for short distances. The average fare in Glasgow is less than two cents. The majority of the people travel short distances for one cent. The same is the case with the London County Council's municipal tramways. Again on the Metropolitan underground railway in London, which has a total distance of 64 miles, while the fares vary from two cents to \$1.80, the average is less than four cents—again demonstrating clearly that low fares for short distances suit the English public. It will not be possible to get uniform fares in English towns until that fare is reduced to the minimum coin usually current, viz., ½d., or one cent. The prospect is not impossible, as, with the economies which will follow electric traction, the average fare, which is now in a number of cities 3d., or 1½ cents, may before long be reduced to a universal ½d.

#### GLASGOW STREET RAILWAYS

The best example of successful operation is to be found in Glasgow. Under the municipality the passengers carried on the street railways have increased in seven years from 57 millions to 163½ millions. The revenue from the cars, notwithstanding the great reduction in fares, has increased from 10.26d. to 11.90d. per car mile. So great, however, were the profits of the undertaking that the corporation have been able to reconstruct the whole of the permanent way out of revenue. It has also set aside large sums for depreciation, and accomplished the feat of keeping the track in perfect condition and of writing down the whole of the horse equipment out of existence—all from the profits of seven years. Early last year, therefore, the Glasgow Corporation were able to start its electric traction system unburdened by any capital expenditure for the old horse car service. Besides laying aside ample reserve funds, the Corporation pays a mileage rate to the city funds, amounting last year to £12,500, on the same basis as the former company did. The capital of the tramways is borrowed for thirty-one years. Two and a half per cent. is set aside as a sinking fund and invested at 3 per cent., which will wipe out the loan in that period. New loans incurred are treated in the same way. It is the custom of municipal undertakings—well illustrated in the case of Glasgow—to keep down the capital account, and to draw largely from their revenues for renewals, etc.

#### DEPRECIATION

The advocates of company interests have recently been attacking municipalities for not setting aside sufficient sums for depreciation, as such. Criticism of this kind is prompted, not in the hope of setting municipal undertakings on a more stable financial footing so as to better safeguard the interests of the future taxpayers, but is advanced simply to lead to overburdening the undertaking as it stands, so that from a commercial point of view comparisons with company work may be more favorable. Moreover, should generous depreciation lead to a temporary balance of accounts on the wrong side, which means drawing from local taxation, the object of the critics is achieved as their whole aim is to present municipal ownership in the worst possible light and sympathize with the local taxpayers who have to find subsidies for losing concerns.

It is generally held that in the case of municipal works for which loans for short periods are granted it is adequate, provided the works are maintained in a thoroughly efficient state out of revenue, to set aside only a sinking fund which will liquidate the debt in about twenty years' time. In regard to tramways it is advisable, after the first

few years of the system, to adopt a more generous policy, and in addition to providing a sinking fund, which would liquidate the loans in twenty-eight or thirty years, to build up a reserve fund for contingencies, and perhaps also set aside amounts for depreciation. It is considered that a reserve fund is necessary in view of possible changes in methods of transit. The profits from the municipal operation of tramways promise to be so large that there seems to be little difficulty, once all the undertakings are in going order, to carry the public at very low fares, and also to provide depreciation and reserve fund. The method adopted in Glasgow has been, not to aim at making a profit in relief of local taxation, but to carry the greatest possible number of persons the longest possible distance at the lowest possible fares. Under this system it would not in the least disturb a municipality if in one year, for some accidental or exceptional reasons, it had to draw from a local taxation fund in support of the tramways.

#### MUNICIPAL AND COMPANY PLANTS COMPARED

A critic of municipal ownership in a paper read before the Society of Arts this week made a comparison between Dublin and Glasgow intended to show the advantages of private enterprise in Dublin. The only point in favor of Dublin is that it had electric traction a year or two before Glasgow, but the people of Dublin are now paying dearly for giving away their tramway franchises, as the following comparison between the two cities for last year shows:

	Dublin Company.	Glasgow Municipality.
Length of single track (miles).....	92.80	103.53
Total capital expended.....	£1,039,286	£2,041,036
Total revenue.....	£242,515	£583,239
Operating costs.....	£148,827	£263,220
Percentage of costs to revenue.....	.61	.45
Gross profits.....	£93,688	£320,019
Return on capital.....	8.94 p. c.	15.68 p. c.
Interest.....	£25,580	£59,340
Depreciation or sinking fund.....	£1,000	£36,975
Percentage to capital.....	.19	.81
Surplus.....	£67,108	£223,704
Passengers carried.....	45,513,734	155,243,378
Number of car-miles run.....	6,664,914	11,935,099
Number of passengers per car-mile.....	6.82	13.01
Revenue per car-mile.....	8.35d.	11.71d.
Revenue per passenger.....	1.22d.	.90d.
Cost per passenger.....	.79d.	.41d.
Total power costs per unit.....	.79d	.60d.
Operating costs per car-mile:		
Power costs.....	.79d.	.53d.
Traffic costs.....	2.27d.	3.23d.
Maintenance and renewals.....	.62d.	.81d.
Management expenses.....	1.66d.	.72d.
Total operating costs.....	5.36d.	5.29d.

It will be noticed among other things that although the routes are much shorter in Dublin the average fare is more than a third of a cent higher than in Glasgow and that management expenses per car mile is double under the company.

The following is a comparison between results in small towns. The towns are near each other; they have about the same population and do not differ much in character:

	Carlisle Company.	Southport Municipality.
Population of district served.....		
Length of single track (miles).....	45.500	48,100
Total capital expended.....	8.25	10.00
Total revenue.....	£100,972	£103,500
Operating costs.....	£8,676	£15,964
Percentage of costs to revenue.....	£6,237	£9,395
Gross profits.....	£2,439	£6,569
Return on capital.....	2.44 p. c.	6.82 p. c.
Dividend or interest.....	£1,631	£3,365
Depreciation or sinking fund.....	£633	£2,885
Percentage to capital.....	.63	.300
Surplus.....	£175	£319
Passengers carried.....	2,010,873	3,317,963
Number of car-miles run.....	323,044	389,827
Times population carried.....	44	69
Number of passengers per car-mile.....	6.22	8.51
Revenue per car-mile.....	6.23d.	9.62d.
Revenue per passenger.....	1.00d.	1.13d.
Cost per passenger.....	.74d.	.68d.
Total power costs per unit.....	1.67d.	1.67d.
Operating costs per car-mile:		
Power costs.....	1.49d.	1.75d.
Traffic costs.....	2.42d.	3.00d.
Maintenance and renewals.....	.11d.	.21d.
Management expenses.....	.61d.	.82d.
Total operating costs.....	4.63d.	5.78d.

These results are for the first year of the undertaking in each case.

#### PUBLIC OPERATION MORE PROGRESSIVE

The municipalities are proving to be the pioneers in street railway enterprise. Huddersfield, for instance, led the way in using cars for post-office purposes. It placed collecting boxes on the cars and carried postmen and telegraph messengers, for which privileges the post-office paid an annual fee. The cars were also used for parcel delivery. Blackpool municipality gave the first ex-

ample of the conduit system in England. Leeds experimented with the surface contact system of traction. Wolverhampton has laid down the Lorain system for a year's trial. Bournemouth is the only town now using the conduit system. Bradford contributed toward an experiment in electric traction to help the company get rid of its steam cars.

Half penny (one cent) fares were popularized by Glasgow. Free transfers were initiated in Sheffield as soon as the system was municipalized. Until the London County Council acquired the tramways no night cars were run in London—no cars were on the streets after 12 o'clock, and they did not run early enough in the morning. The companies followed the example of the Council, but have now discontinued the system. Then the municipalities study the convenience of the population in all sorts of ways. They put on more workmen's cars for early morning service; Nottingham Council and others run special cars to football and cricket fields; Blackburn carries school children at farthing (half cent) fares. The municipalities also have led the way in providing their motormen and conductors with neat uniforms. They have treated their staff well, and the public has benefited by greater courtesy and politeness on the part of the men. Companies were in the habit of disfiguring the cars inside and out with advertisements; municipalities permit only very little advertising on cars, and in some cases—as in Glasgow—abolish it altogether. In every case municipalities have striven to provide the best possible services and to charge the lowest possible fares consistent with profit. They have sent deputations to European towns to investigate existing systems of traction, and each town has given the benefit of its experience to others. Unquestionably the British municipalities have in all directions shown more enterprise in street railway matters than companies have.

#### CIVIL SERVICE PROBLEMS

By the end of the present year, most of the large municipalities will have passed through the transition period. They will have got rid of all their horse cars and have installed complete systems of electric traction. At present the outlook is most promising. In fact, there is every indication that municipal street railways, from an administrative as well as a commercial point of view, will prove to be easily successful. The work of managing the undertakings is apparently simpler than any other department of municipal industrial work. Once the service is complete and is maintained in a thorough state of efficiency, the administration runs almost automatically. Glasgow and other corporations that have been early in the field have devised efficient systems for managing the staff and distributing the work. The managers, engineers and other chief officials, all secure their position through their own merits. They are removed from political or party influences, and they are not susceptible to sordid temptations. The committees in charge of the street railways have so far been composed of capable business men, whose only desire has been to see that the undertakings were managed for the good of the whole community.

The opponents of municipal ownership foreshadow that danger will arise from increasing the number of municipal employees, and that the tramway motormen and conductors will take part in elections, to serve their own ends. It is even suggested, as a remedy for this supposed danger, that all municipal employees should be disqualified from voting. On the other hand it is pointed out that street railway companies in the past have tried to use far greater influence upon public opinion than ever the employees are likely to do, and have used it solely with the hope of preserving their privileges. It is also shown that municipal employees are not likely to be so short-sighted as to advance unreasonable demands, knowing as they do that such conduct will only lead to reaction and the injury of their own class. As to their influence at election times, no indication of danger from it has yet arisen. It is possible for a representative of the tramway employees to be elected on a city council, but not solely by the vote of the employees. Trades unionists have representatives at councils already, but so far they have only tended to increase the representative character of those assemblies. Then again, the influence of employees at election times is not so great as their numbers would indicate, as many of them live outside the municipal area of the authority which employs them, and a considerable minority have not qualification as voters, as the long period of qualification required and other difficulties deprive a large portion of the working population in every city of their votes.

## MUNICIPAL TRADING

**European and American Methods and Results Compared—The Views of an Advocate of Private Ownership of All Public Utilities**

*By Robert P. Porter*

WHILE I am preparing this paper a lively discussion is proceeding here in England on municipal trading, and the most talented men on both sides of the question are debating the subject on platforms and in the newspaper press. The *Times*, still as powerful as ever in moulding British public opinion, opened its great debate, which has now lasted nearly six months, with the following strong manifesto:

"The time has, in fact, come for the British people to say whether or not they concur in the transfer, not only of great, speculative, and often even experimental industries, but of all sorts of minor trades as well, to municipal control; whether or not it is desirable that our towns and cities should be changed into essentially socialistic communities where trade, industry and local government will all be conducted on socialistic lines; whether or not the incurring of stupendous financial liabilities, the rapid accumulation of local debts, and the increase to an almost unbearable extent of local taxation, are consistent with the best interests not only of the towns and localities concerned, but of the nation at large; and whether, assuming that all these things are right and desirable, the status of our local governing bodies is being maintained at so high a point that one may feel perfect confidence in their efficiency alike for dealing with questions of public health and ordinary local government, for the conduct of so many great and varied industries and enterprises, and for the wise and effective control of a huge municipal indebtedness so that it shall not become a menace to the welfare of the country."

The Society of Arts, which four years ago inaugurated the opposition to municipal trading, held an important meeting recently, with the Lord Chief Justice (Lord Alverstone, formerly Sir Richard Webster) in the chair. In opening the discussion, Lord Alverstone remarked, in substance:

"The right of the corporations to spend money on undertakings unquestionably depends on statutory authority; and it is exceedingly important that before fresh statutory powers are given, the subject should be thoroughly understood and that the nation and those who pressed for municipal trading should know to what they are leading the country. The gravity of the question is really attested by the enormous figures showing the point which local indebtedness has reached and the ever-increasing burden—the burden which had been forced upon them and which is increasing with great rapidity. Reference has been made to the Municipal Corporations Association; only those who have been in that House know the almost unfair weight and power which municipal corporations have in that assembly. As an old member of the House of Commons, I know that a local member cannot—almost dare not—resist the wishes of a corporation in his constituency, and all the corporations act together. When, therefore, an attempt is made to obtain statutory powers for private enterprise, the influence of other municipalities is brought to bear on other members of the House, through the influence of the Municipal Corporations Association, so that corporations in other places, who have nothing to do with the scheme in question, oppose it because it is thought it may conflict with municipal trade in the particular place."

On the evening of January 21st, the London Chamber of Commerce held an important meeting to discuss this question, with Lord Avebury (formerly Sir John Lubbock) in the chair. Upon this occasion Lord Avebury said:

"That his objections to municipal trading were not founded in any way on mistrust of, or opposition to, municipal institutions. While admitting to the full the abilities of those belonging to municipal bodies, it did not follow that they had the special knowledge required to conduct manufacturing and business undertakings to a successful issue. Members of municipal bodies, however, could not give that close personal attention to details which was absolutely necessary if business was to be carried on profitably. Another reason was the fact

that municipal councillors changed so frequently. The London County Council had been going on only thirteen years, but so overwhelming was the work that, of the whole 140 original councillors, only twenty-nine were still members. In conclusion he said that if municipalities persisted in embarking on commercial undertakings they would, he was persuaded, increase the rates, check the progress of scientific discovery and stifle if not destroy that spirit of private enterprise to which in the past English commercial supremacy was mainly due."

A discussion took place the same week at the Junior Constitutional Club, at which Lord Claud Hamilton delivered a strong appeal against municipal trading. Referring to the London County Council, Lord Claud said:

"Another danger arises from the increase in the number of municipal employees. In Birmingham the town council employs over 7,000 men, and if the council takes over the tramway system the number will be 8,500. The danger to municipal life arises from the voting power of these employees anxious for the promotion of industrial enterprises and supported, as they would be, by trade unions and other socialistic bodies."

Commenting on this speech the next day, the *London Times* said:

"In every municipality there will be a large body of voters and rate-payers whose interest it will be to encourage and promote expenditure; who will be certain to unite, and will be able when united, to carry their point. When once a municipality has set up an establishment for carrying on any industry, it will be of no use trying to undo the mistake, if such it prove to be. Municipal hands cannot be turned adrift. Employment must be found for them at the expense of the ratepayers and in due course they will agitate for pensions and in the end get them. It will go ill at the next election with any one who suggests that they be discharged because they are useless or that expenses should be cut down. It was stated by Lord Claud Hamilton that the Birmingham Town Council already employed over 7,000 men, and that if the tramways were taken over the number would reach 8,500. The servants and officials of the Glasgow Corporation are put at about 15,000. Well organized, such groups must have great influence in municipal elections; influence sure to be exercised in the long run in favor of granting remuneration in excess of the market rate and of fresh extensions of municipal activity. It is hard enough at present to keep out of municipal politics squalid interests; those, for example, of local tradesmen who want orders, or ambitious surveyors, architects and builders who would be glad to see municipal money freely circulating. What would be the power of their sinister influences if every municipality carried on several large businesses and could give orders for many kinds of goods and services? Municipal politics could not fail to savor strongly of money. In some boroughs they would signify nothing else."

These are not imaginary, but real dangers. The establishment of enormous bureaucracies and the creation of a privileged class of employees constitute a menace to the public weal. Reflect for a moment what an organization like Tammany would become if, in addition to the present force of officials, an army of industrial employees should be added. In England the proportion of the electorate who go to the poll seldom amounts to more than 30 per cent., and often much less. Already their influence is being felt, and we read the following in the *London Daily News* in relation to a recent municipal election in Birmingham:

"Even the city council party were not immaculate in their practices. It was not dignified to see leading corporation officials marshalling bands of corporation workmen into the polling area and explicitly instructing them how to vote in favor of the bill."

The town clerk of Birmingham recently said:

"Speaking purely of my own personal opinion, I should like to see all corporation employees disfranchised."

The Lord Provost of Glasgow is in favor of some such change as this, while the disfranchisement of city officials was openly advocated last autumn in a paper read before the British Association at Belfast.

#### GROWING OPPOSITION TO MUNICIPALIZATION

However, in spite of the present activity, the campaign against municipal trading in England has not yet assumed much political importance on either side. Members of Parliament are approaching it with the characteristic caution of the British race, and so far the party leaders on both sides have tried to regard it—as General Hancock did the tariff—as a local issue. Mr. Balfour won applause from the attacking party three years ago by granting a Joint Select Committee of the House of Lords and the House of Commons to investigate the subject and report. The committee was composed of capable men, held a number of sessions, heard considerable evidence and interested testimony on both sides. A volume of minutes and evidence was printed with an appendix, and then the whole subject was dropped. There was no report, no conclusions, no recommendations. The abrupt ending of the Select Committee was construed by the opponents of municipal trading as an evidence of the political strength of the municipal clerks, and unceasing efforts have since been made to revive the Joint Select Committee, or better still, to appoint a Royal Commission with power to take the necessary time and go to the bottom of the whole matter. The Government has not yet recognized the appeal though the demand is rapidly becoming formidable and in the end will be granted.

Whatever selfish interests first promoted the campaign against municipal trading, the movement is rapidly gaining ground, and the attitude of the municipal officials throughout England has undergone a decided change. At first all criticism was treated with singular contempt. We were told it was the work of "disappointed company promoters," "a conspiracy of the Electric Combine," and, finally, the "machinations of the agents of American Trusts." The British public is not easily frightened, and with accumulating municipal indebtedness and increasing local taxation the plain every-day ratepayer who has no axe to grind is beginning to ask for an accounting. In response, elaborate tabulated statements and statistical exhibits have been prepared and sent broadcast, some of which are marvels of municipal accounting, and from now on it may fairly be assumed that both municipal trading and municipal socialism in Great Britain have been compelled to assume the defensive. Property owners' and ratepayers' associations are forming all over England, and the United Property Owners' and Ratepayers' Association of Great Britain is assuming national importance. The Industrial Freedom League, an association formed "to free private enterprise from undue interference and from rate-aided competition," is also gaining ground in all parts of the kingdom and must continue to increase its influence, as the ratepayers realize the gravity of the abuses creeping into the administration of local affairs.\*

#### AN AMBITIOUS PROGRAMME

I am asked to discuss that boundless field of municipal activity which is prepared to make the British citizen the constant subject of corporation solicitude from the time when in his cradle he is fed on municipal milk to the day when his remains are reduced to ashes in a municipal crematorium. The leading advocates of these expansive, and to the ratepayers' expensive, ideas have made considerable headway in Great Britain during the last twenty-five years, and are now boldly proclaiming that there is no finality to municipal enterprise, no limit to municipal business.\*\* These industries, be it remembered,

\* At the end of this paper I append a complete list of the important literature opposing municipal trading which has been printed in England during the last four years by the Government and by various public bodies. This will be useful to the American student and enable him to study the subject in greater detail than it is possible for me to treat the question.

\*\* Besides the numerous industries at present being carried on by British municipalities, we find among the powers applied for the manufacture of steam engines, dynamos, gas and electric fittings, and paving materials, cold air stor-

must be carried on at the risk of the ratepayers, by representatives not elected because of special experience, but because of party affiliation. Nor is it expected that the men thus called upon to administer these important trusts and successfully conduct these industrial enterprises will give more than part of their time to public affairs. At least you will agree that the programme is an ambitious one and its successful execution both difficult and costly.

Before considering the reasons for continuing this programme in England and for transplanting any part of it to the United States, it may be well briefly to recount what has thus far actually been accomplished. In doing so it will be my endeavor to deal exclusively with facts, and when comment is necessary I will, as far as possible, quote British authorities. Much of the municipal work thus far done by our kin beyond the sea, when confined to the administration of city affairs and not to trading enterprises, has been excellent and may serve as a useful object lesson. It has all, good and bad alike, met such unqualified praise in the United States that it requires some courage to present the facts and argue the case on its merits. We are all well aware that the administration of municipal affairs in many of our large cities is far from what it should be, but it is by no means so hopeless as some seem to imagine. The essentials of municipal administration are as a rule well looked after in the United States.† In America we find the time and ability of those willing to take part in such work fully absorbed in performing the regular functions of municipal government. They have not yet entered into trade. When one realizes how strong is the temptation to jobbery under existing conditions, it is perhaps fortunate for the taxpayer that the constitutional debt limit, together with the American dislike for paternal government, has kept our municipalities from venturing far along the dangerous pathway of municipal socialism.

#### STATE SOCIALISM IN AMERICA

At this point the British and American systems diverge. In all that strictly relates to the administration and government, the assessing of property, the levying of taxes, the creation of debt and looking after the general welfare of the inhabitants, it might be interesting and even useful to compare British and American cities of the same size. In all that relates, however, to municipal trading or ownership of profit making undertakings, the experience has been almost exclusively English. Perhaps the phrase (exclusively English) should be modified, for we are not entirely without experience. To recall it, will you pardon me for quoting from an article on the history of our state debts, which I wrote more than twenty years ago.†† The lessons taught by this experience have long since been forgotten, but the legacy of these unhappy experiences,

age, ice manufacture, milk supply, concert rooms, shop, saloon and refreshment rooms, hotels, cycle tracks, etc. Tramcar factories have been established, and even a brass foundry to make fittings. Municipal telephones are being undertaken, and a system of universal fire insurance is being discussed. Municipal banks and the issue of municipal bank-notes, municipal pawnbroking, municipal bakeries, and even municipal public-houses, have all been seriously suggested. Municipal collieries have been under discussion in the north of England, and the Bradford Corporation has actually proposed to supply coal for retail consumption. To the commonplace duties connected with public health, building regulation, streets, policing, protection from fire, care of parks, we must add all these more intricate businesses.

† From a sanitary point of view they compare favorably with English cities. The water supply is invariably better and the fire department more efficient and up-to-date. In matters of public education, including technical and industrial schools, we are decidedly ahead, as we are in public libraries. Our parks and squares and breathing places, both in number and beauty, are quite equal to those in British cities and as a rule as well kept up. The streets of some American cities suffer when compared with those of England, but in the matter of lighting—both gas and electric—and in locomotion, it must be admitted we are far ahead of our British cousins. I am one of those who believe that the English have just as much to learn in the administration of these great modern centres of commercial and industrial activity from us as we have from them. While we have spent millions in making new streets, in extending boulevards and in laying out new parks and pleasure grounds to supply the needs of modern communities, the cities of the old world have expended just as much in tearing down their old buildings, widening their narrow thoroughfares, straightening out their crooked streets and here and there clearing a spot in a congested district to give the inhabitants more fresh air and light. It would thus seem that the legitimate work of making these cities more habitable for the constantly increasing populations has taxed alike the resources of the old and new

†† International Review, Vol. IX., 1880.

in the shape of the state constitutional limitations of debt, have been of far-reaching and lasting benefit. The quotation is as follows:\*

#### RAPID INCREASE OF LOCAL DEBT

It is impossible to watch the present mad rush of British municipalities into all sorts of speculative industries without being reminded of these experiences. Perhaps the most striking fact which the last annual report of the British Local Government Board (1901-2) brings out is the extraordinary rapidity with which the internal debt of the country is increasing. Last year sanction was given to loans amounting in the aggregate to no less than \$144,677,465, and the average amount added in each of the last three years has been only just short of \$125,000,000. Never before has there been any approach to these figures. In 1891 the sum was \$37,021,495, while the average for some years previously had been about twenty-five million dollars annually. If we go further back, we find that in 1874-75 the entire outstanding debt of British local bodies was just short of \$465,000,000, while in 1899-1900 (the latest year for which exact figures are available) the amount was nearly \$1,470,000,000, and at the present time it may be roughly reckoned as \$1,650,000,000. In 1875 the local debt was about \$20 per head of the population. It is now over \$50.

During part of this period, between 1880 and 1890, municipal debt in the United States declined from \$13.64 to \$11.48, and county debts from \$2.47 to \$2.27 per head of the population. The returns for 1902 so far as received by the Census Office indicate a slight increase per capita of debt between 1890 and 1902, but a decrease when compared with 1880. It will be noted that local indebtedness in the United States is relatively much less per capita than in England. As the figures for the 137 cities, so far tabulated, in 1902 show a decrease from the per capita figure of 1880, the total debt per head of population in the United States in 1902 will probably fall far short of the English figure of 1875.

While local indebtedness in the United Kingdom has risen from \$46,100,500 in 1875 to \$1,469,320,000 in 1900, and stands at \$1,650,000,000 at the present time—per capita increase from \$20 to \$50—the aggregate per capita debt of the 137 largest American cities has decreased from \$56.62 in 1880 to \$48.05 in 1902. Omitting New York, where the per capita debt has remained about stationary, while the assessed value of property has more than doubled, I find that in the 35 principal cities of the United States the net per capita debt has decreased in 22, and increased in 13, the increase in 4 out of the 13 being only slight. In the same period the value of taxable property has more than doubled in many cities, and has in some increased threefold. A similar table compiled for a like number of the principal British cities shows an increased debt per head of population in nearly every case, only one decided decrease being

\* "The history of state debts may properly be said to date from the year 1830, when the states of this Union owed only about \$13,000,000. During the next seven years the greater part of the debt which caused so much financial embarrassment in 1841-42 was contracted, and the state governments laid the foundation for a series of financial disasters which have since overtaken many of our states, and disgraced us both at home and abroad. The increase in the whole public debt of the states from 1830 to 1840 amounted to \$178,409,084. \* \* \*

"When General Jackson became President there was a general and well-grounded belief that the financial affairs of the country were prosperous, and that the United States was in a condition to go forward with accelerated speed. \* \* \* A vehement desire arose to construct great public works, chiefly such as facilitate and promote internal commerce. \* \* \*

"As before said, our foreign commercial debt had been paid with so much promptness that European capitalists formed a very high opinion of both our resources and our honor, and they took the stocks of the states as freely as if they had been gold and silver, until it reached the enormous proportion given above. Then came the calamity. The Bank of England found itself in a critical position; there was a scarcity of money in England; prices fell, stocks were unsalable, the United States Bank of Pennsylvania stopped payment, and its example was followed by every bank south of Philadelphia. Men's eyes were at last opened; they saw that the country had not recovered from the effect of years of speculation, and that the attempts to return to a false position had but increased their difficulties. A panic followed. All property seemed for a time to have lost its value. Such was the condition of affairs when it became necessary for some of the states (to which I shall more particularly refer) to refuse and others omitted to provide for the interest which had become payable upon their debts. Until this time the word 'repudiation' had not entered into the financial history of the American states. The word originated in the state of Mississippi, and was ushered into existence by Governor McNut, of that state, in January, 1841, in a message suggesting the plan of 'Repudiating the sale of certain of the state bonds on account of fraud and illegality.' "

noted, while only three municipalities increase their indebtedness as their ratable value appeared to justify it.

#### INDUSTRIES A BURDEN UPON THE RATES

From this examination it seems evident that municipal trading in England has greatly increased debt, not only actually, but relatively to the assessed rateable values and per head of population, that the profits from such enterprises are largely mythical and disappear when the stern business test of the dividend warrant is applied to them, that far from reducing rates there is every reason to believe that rates have been enormously increased by reason of this epidemic of municipal trading. On the other hand, municipal debt has either decreased or remained stationary in the United States when compared with population and value of taxable property. This may have been compulsory virtue on the part of our own cities and due to the debt limitations, but such I find to be the facts.

The excuse offered for the enormous increase of local debt in England is that a considerable part of it has been contracted for productive industries, and these estimates range from 35 to 50 per cent. But the profits from many of these concerns, under municipal management, are very small indeed. The only reliable estimate on these profits may be found in a paper which Sir Henry H. Fowler read as President of the Royal Statistical Society, and showed that on a borrowed capital of \$416,895,000, with an average annual income of \$44,490,000, upon which only the sum of \$405,835 had been set apart for depreciation, or about one-eighth of 1 per cent., there was an average net profit for the five years ended March, 1898, of \$1,851,705, or about one-half of 1 per cent. on the outstanding debt which the Local Government Board then put at \$359,415,000.

It must be very tiresome for the British ratepayer to hear so much about the "profits" of municipal enterprise, when throughout the kingdom year after year surely and steadily the rates are increasing. In England and Wales in 1875 the average amount of rates raised by local authorities was 3s. 3d. in the £ of valuation, or about \$4 per head of population. The ratable value was then \$573,230,000. In 1900 it was 4s. 11d. in the £ of valuation, or per head of population about \$6.38, while the ratable value had increased to \$878,110,000. The sum total raised from rates was in 1875 \$95,990,000, but in 1900 it had risen to \$203,670,000, being an increase of \$107,675,000, or 112 per cent. But whereas in 1875 the grants from imperial taxation were only \$8,405,000, in 1900 they amounted to \$61,265,000, being an increase of \$52,860,000, or 628 per cent. Moreover, while the ratable value of the municipal boroughs was in 1875 \$128,565,000, according to the last return in 1897 it had increased to \$256,090,000. A table prepared by a competent actuarial correspondent for the *London Times* shows for 35 of the principal boroughs of England (1) the total loans raised for remunerative works, (2) the municipal rates actually levied per pound of assessable value, (3) increase or decrease in rates per cent. The figures were given for the years 1886-7 and 1900-01, covering a period of active trading. In 3 cases only out of the 35 have the rates been reduced. It is not contended that absolute deductions can be drawn from these figures, but it is claimed in England by the opponents of municipal trading that the onus of establishing a case for commercial enterprise on the part of municipalities rests with its advocates, and that so far they have failed to do it.

The claims of the municipal trader that the profits from these productive industries have in the past, are at present, or will in the future, reduce rates, are absolutely illusory. Of course, it is enough to give here and there instances of "profits" turned over in aid of rates, but these individual cases have no value in face of the steady rise of local taxes which we have seen has taken place throughout the kingdom. Not long since a well-known advocate of municipal trading published very widely a table of the reductions in rates for 1900-01, which he declared were due directly to the profits of municipal trading. Here is a sample of how it was done: Manchester reduced its rates in 1900-01, so we are told, by 14 cents in the pound through municipal trading. The corporation, says a writer in the *London Times*, wanted a subsidy of \$250,000 in relief of rates from the gas undertaking, and as there was no surplus the price of gas was raised 3d. per thousand feet in order to yield it. Is this to be put down as an example of how rates are reduced out of the "profits" of municipal enterprise?

(To be continued.)

## SEWARD PARK PLAYGROUND

**Eight Years to Complete a Playground—New York's Slow Way of Doing Things—The Story Told in Plain Words**

By Charles B. Stover\*

Only after eight years can the annals of the construction of this public work be written. These dates cover approximately the long



SEWARD PARK KINDERGARTEN PLATFORM, WITH THE USUAL CROWD OF SPECTATORS

period required in our proud, progressive, and expeditious city of New York for the realization of a new idea, even when expressly enacted by law.

The Tenement-house Commission of 1894 recommended a bill, providing for this park and one other, "to be finished in part as public playgrounds." Such a bill became a law April 11, 1895. To make sure of reasonable haste, the act directed that construction on the park begin within three years from its enactment. But another Tenement-house Committee was appointed, sat, made recommendations and secured the passage of the revolutionary Tenement Law of 1901; and that law went into effect before the first stone was turned in the construction of the East Side park provided for by the Commission of 1894.

### DELAYS OF OFFICIAL FOSSILS

Certain office-holding fossils, backed up by district political leaders of the Bourbonist type, who in turn spoke for a mere handful of little storekeepers who saw, in the removal of tenements from the site, a loss of business and therefore blindly opposed the whole project. This influential but inglorious combination fought the new-fangled idea from year to year. And beyond a doubt the old order would have won, had not the Outdoor Recreation League championed the new, determined to sheath its sword only after complete victory.

Of the Outdoor Recreation League it can be recorded

\* President of the Outdoor Recreation League of New York, who first wrote this article for *Charities*, the organ of the Charity Organization Society of New York, and by whose courtesy the MUNICIPAL JOURNAL AND ENGINEER is permitted to reproduce it with the cuts.

that all its members remained loyal to our high purpose. But the faith of some friends of playgrounds grew cold. After a while they said—"Why fight the park department any longer? We are tired of the park's unimproved aspect. Let's get something for the people. Take what you can get." But we never yielded; and a glance at the view "Seward Park as It Is To-day" will show that our success outran our original demands. For while we have secured the large playground, the athletic field and gymnasium and the baths, we have in addition closed Division Street as well as Norfolk, and by that greatly enlarged and improved the park.

And before the end of this brief narrative of Seward Park Playground's slow improvement, I shall present evidence to show that New York, after the long travail of adopting a new municipal function, goes far and fast. And the better time has come suddenly, like the dawn of day. About a dozen years ago I got this answer from the park department to the proposal to open a playground in Tompkins Park—"No, sir! In the administration of the parks we must not cater to any particular class in the community." And here I can't refrain from recording that later, before the ink of the governor's signature to the Central Park Speedway act had dried, the same park board began to drive the stakes, setting apart a strip one hundred feet wide, on the park's western border, from 59th Street to 110th Street for the owners of fast trotters.

Throughout the four years of the late park commissioner's administration, 1898-1901, there was no evidence of his radical departure from the park board's mental attitude toward children twelve years ago.

### THE DEBT-LIMIT HOBOGLIN

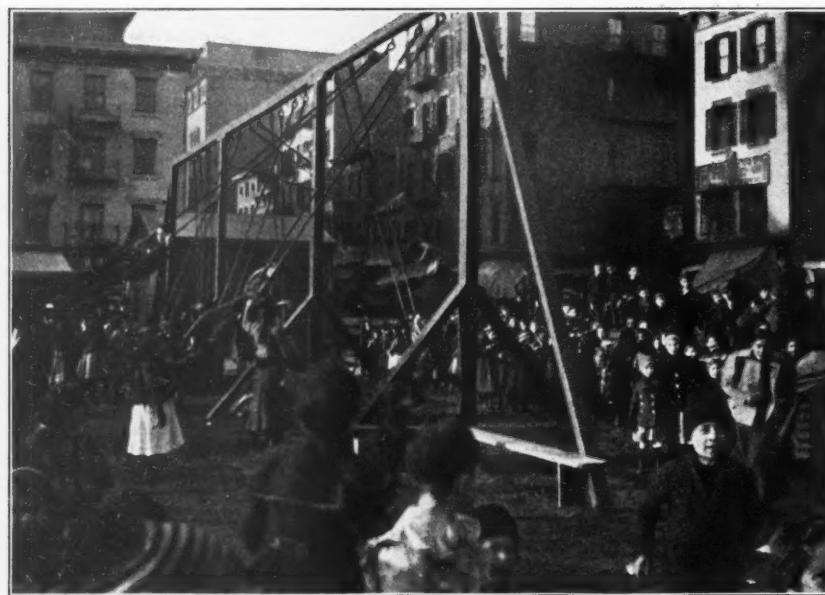
Now follows the record of our dealings with Park Commissioner Clausen in the matter of the improvement of Seward Park. In the summer of 1898, the Outdoor Recreation League had opened the first outdoor gymnasium and playground, at West 53d Street and the river—the ground hence called Hudsonbank. Only short observation of this experiment was needed to convince us of the great value of such grounds. And, therefore, that same summer we undertook



THE MAY-POLE IN SEWARD PARK PLAYGROUND

to set the unimproved space known as Seward Park in order. The hobgoblin of the debt limit was brought forth to silence the popular demand for the park's complete improvement, though more than three years, the period fixed by law for the beginning of the work,

had elapsed. So the Outdoor Recreation League—not the park department—sought the next best thing—the park's temporary improvement, by filling up the waste places—dumping holes for refuse—left by the overthrow and removal of the tenements once standing there.



A CORNER OF SEWARD PARK PLAYGROUND ON ONE OF THE COLDEST DAYS OF WINTER

Unfortunately this little job of leveling the ground and fencing it in, amounting to only a few thousand dollars, fell into the hands of a typical New York public works contractor, and nine months elapsed before the league found the place ready for its enterprise. Finally in April, 1899, Park Commissioner Clausen permitted us to enter under such conditions as these:

"The gymnasium and playground to be conducted without expense to the Department of Parks.

"The Outdoor Recreation League to keep a sufficient number of attendants at the gymnasium and playground at all times to maintain order.

"The Outdoor Recreation League to be responsible for any accidents that may occur by reason of the permission herein given, and to save this department and the city of New York harmless from the same."

We shouldered all the responsibility, entered and erected a fully equipped playground, gymnasium, running track and athletic field, and opened the same to the public on June 3, 1899. The scene of this opening day continues memorable in East Side history. The mighty multitude then gathered together will only be surpassed by the gathering on the approaching opening day of the finished park playground. The fame of Seward Park has grown

from that day to this. Visitors from all parts of the city and from many other cities lauded the undertaking at the park between Hester, Suffolk, Division, Jefferson, East Broadway, Canal and Essex Streets.

#### PLANS FOR THE PARK.

After eight months of successful management of the ground, the Outdoor Recreation League, in February, 1900, submitted to the park board plans for Seward Park.

But the leaven of this advice produced no effect in the mind of the commissioner, nor the daily demonstration we had been making in Seward Park for eight months past. In October of that year, he got the approval of the Board of Estimate and Apportionment for his first set of plans, which made not the slightest provision for playground and gymnasium. In the communication he sent with these plans to the Board of Estimate and Apportionment, Mr. Clausen said:

"These plans contemplate a small park in the natural style, with lawns and shrubberies covering as large an area as possible." To us these plans were unnatural, detestable. We promptly kicked, and at the following meeting of the Board of Estimate, Controller Coler offered a resolution to rescind the recent action. It was rescinded. Commissioner Clausen's first plans were rejected.

Two months later, in December, 1900, the park board, again without conference beforehand with our league, presented its second set of plans to the Board of Estimate and it was rushed through, for it contained both a gymnasium and a playground. These plans conformed to the letter of the law, but not to our notions of the proper apportionment of the park space; for the Board's playground measured twenty by seventy-five feet, all asphalted and fenced in,

which, merged with the space to be devoted to gymnastic purposes, amounted to about one-tenth of the area we had been occupying and found decidedly inadequate.

We kicked again. And just as hard as before. No tenth of a loaf could satisfy, in an experiment which will tell on all future improvements of small parks in tenement districts. Our protest was heeded, and one month later, in January, 1901, Commissioner Clausen's second set of plans was rejected by the Board of Estimate. With these plans the commissioner had sent the report of his landscape gardener, a very remarkable document, an apology



SHOWING THE POPULARITY OF THE OUTDOOR KINDERGARTEN

for their derelictions. Among the excuses given for not providing a playground at the beginning was the following: "As playgrounds in other parks had proved to be failures, it was considered neither

wise nor necessary to provide a playground at the time; consequently, the plans were drawn without a playground and with a view to provide sufficient lawns, shrubberies, promenades and shade trees to make the park really useful and attractive for the hardworking people of the neighborhood." As he gave no example of such failures of playgrounds in public parks, excepting Hudson Park (at Leroy and Hudson streets), where there never was a playground and ignored the fact that the experiment in Seward Park, the place under consideration, had been an eminent success, we may conclude that the writer was ignorant of his subject or wilfully blind to the fact.

#### THE PLAYGROUND OPPOSED

The landscape gardener, further on in the same statement, endeavored to set forth the character of the East Side population and their wants, thus: "It now remains to be considered how much of the park area should be set aside for playgrounds and how much for general park purposes. It was found upon investigation that the neighborhood for miles around the park is crowded with hard-working people, who, during their day's work, have no lack of healthful exercise, and who, during their few leisure hours, would be more inclined to quiet rest, such as a park under ordinary conditions would afford. The tenements are generally small and crowded and the women and children of the neighborhood would derive great benefit from the influence of a peaceful park, with green lawns, ample shade and attractive shrubberies; whereas the playground and gymnasium would be chiefly used by big boys, to the exclusion of all the gentle population of the neighborhood." This statement, a product of the writer's imagination, was prepared at a time when thousands of the "hard-working people" of the neighborhood and of the women and children were daily resorting to our playground and gymnasium in Seward Park, and when the "gentle population of the neighborhood" was not deterred from visiting the park by the "big boys." Knowing well the proclivities of the park department in argument, we had with us, on the occasion of Commissioner Clausen's second defeat before the Board of Estimate, a petition of twenty thousand signatures of the people around Seward Park asking for an ample playground and gymnasium there, as well as the lawns and shrubberies.

After its second defeat, the park department for the first time evinced a readiness to confer with the representative of the Outdoor Recreation League, and early in the summer of 1901 the outcome was a third set of plans, which we approved,—provided Norfolk and Division streets had absolutely to remain open in the park. But we insisted that they should be closed, and their area within the park boundaries be included in the general park area, making it all one plot of ground. The park department said it had endeavored to close the streets and failed, and would now push its third set of plans, the streets remaining open. We urged the department to wait and to permit the Outdoor Recreation League to attempt to close

the streets. This was agreed to. Summer, however, was at hand. The municipal assembly had adjourned for the summer. And even after sessions were resumed it was difficult to get the requisite vote for the resolution in the council, on account of the slim attendance. Finally, however, that body adopted the street-closing resolution without opposition. But long and arduous was the effort to get this resolution through the Board of Aldermen, where a large Republican nucleus opposed it on the general principle of holding up all legislation on the eve of the incoming (the present) administration. However, by persistent button-holing of member after member, the street-closing resolution was finally passed and signed by Mayor Van Wyck.

#### THE FOURTH PLAN APPROVED

Then our triumph over the park department became complete, and its fourth set of plans for Seward Park, with streets closed and providing ample playgrounds, gymnasium and baths, received the league's hearty approval. These plans were quickly approved by the Board of Estimate; but in the Board of Aldermen the hold-up tactics

of the minority were still more active against this measure, inasmuch as it carried with it an appropriation of \$137,000. Their zeal to eschew Tammany and all its works again finally yielded to argument, and the fourth set of Seward Park plans was adopted. This resolution, then, only needed the approval of Mayor Van Wyck, which, however, he could not attach; the resolution had come to him so late in his term that the publication of it for several days in the *City Record* (required by the charter, before the resolution could be signed by the Mayor) more than consumed



SEWARD PARK AS IT IS TO-DAY \*

the remaining days of his term of office. We then looked for the signature of Mayor Low, who, however, by advice of the Corporation Counsel, refused, on the ground that for him to sign an act passed by the previous administration might render it invalid.

So it was that the plans for Seward Park finally came before the new Park Commissioner, Mr. Willcox, who heartily gave his consent to all the main propositions, which his predecessor had adopted only after years of struggle.\*

The contract for the park and bath pavilion—let only last winter—was separated from the contract for the remainder of the work, the drainage system and the general layout of the park, including the playground, the gymnasium, the running track and athletic field. This portion of the work is now all but completed. The commissioner says he expects to have the pavilion erected before next summer. The happy event may fall on May Day.

I have said that New York moves fast, when at last it does adopt a new municipal function. Dawn has broken upon the park department. Commissioner Willcox says his chief effort during his two years of service will be to develop the playground and gymnasium features in small parks, and that he hopes to carry such improvements to completion in four of them—Seward, Hamilton Fish, De Witt Clinton, and Thomas Jefferson. He declares that looking

\* Within the temporary fence the bath pavilion will be constructed this spring; in the center an athletic field and one-ninth mile lap running track; and on the extreme right the playground oval. All will be equipped with apparatus.

\* There was this exception: That the plan to transplant to Seward Park some of the large elm trees on upper Broadway, then in process of destruction by the subway contractor was vetoed. This I lament, knowing the great need of shade in the playground, and believing the commissioner was badly advised.

back on his administration his chief pride will be in these park playgrounds.

There is still more refreshing news to be told. Only one of the daily papers published in full an important report, made to the Board of Estimate and Apportionment on January 9 by Controller Grout, based on the recommendations submitted to him by a committee of the Outdoor Recreation League, consisting of Miss Lillian D. Wald and the writer, recommendations which were the outcome of a previous communication from Miss Wald to the controller, in reference to the availability for playground purposes of certain condemned market sites whose buildings had long since outlived their purpose of an earlier day. Taking a broad view of the whole subject, we designated Clinton Market only as a possible playground, and that in case it is not absolutely needed for a Street Cleaning Department stable and a refuse disposal plant. Upon the narrow strip of ground covered by Catharine Market we recommended the placing of a row of trees and park benches. Should Centre Market become the site of a new police headquarters, then we recommend that the old Mulberry Street Headquarters site be turned into a playground for that end of "Little Italy." Further, this committee submitted to the Controller a list of eight playground sites, selected with much care. "These suggestions," the Controller says in his report, "do not appear to me unreasonable," and of the eight playground sites he says: "I would recommend that this board appropriate for the purpose of purchasing playgrounds on the lower East Side, as recommended by the Outdoor Recreation League, the sum of \$250,000, and that authority be given to the Controller to secure options on plots in the several localities and submit them to this board. If property can be acquired at market rates, there is no reason why the several plots cannot be secured at once by purchase, the land cleared and the ground be leveled by springtime, all of which will show a quick return for the money expended." This recommendation, having received the outspoken approval of the Mayor, the Controller, President Cantor and President Fornes, was adopted by the whole board. We may expect to see \$250,000 worth of playgrounds added

to New York City's equipment for the training of its children. And perhaps the amount to be expended will be increased.

#### FINAL SUCCESS OF THE LEAGUE

The league went further and recommended the acquirement by the city of all private lands, lying between Corlears Hook Park and the river for the construction of a water-front promenade. This matter the Board of Estimate disposed of by adopting the Controller's recommendation "that the matter be referred to the Commissioner of Docks and Ferries for report and estimate of cost, and that he submit plans for the improvement of this water front to the Commissioners of the Sinking Fund for approval at an early date."

Nor is this all. Two new East River bridges are in course of construction which will land thousands daily in the thick of the East Side. The artistic and transportational requirements will be met by various agencies. It will mean the expenditure of millions of dollars. Approaches must be arranged, tenements razed, thoroughfares widened to care for this new traffic. The season is strategic to those who would make all this change and outlay count toward the social redemption of the East Side as a place to live in. Seward Park is evidence of what can be done in this direction by concerted action. It will be more conclusive evidence when, with its playground and its pavilion opened, with more land thrown into it as a result of bridge building, with a new Carnegie library overlooking it from one side and a new sky-scraping school building on the other, it will be at once one of the most vigorous life centers and one of the handsomest squares in Greater New York.

Our municipality now marches forward, and I believe that never again will its park department deny to the children their right to play, under right conditions, in the public parks. In a few years park playgrounds will dot New York.

And here I desire to express the league's and my own gratitude to those public-spirited citizens who stood by us in the long struggle with the park department and bore the very heavy expense of maintaining Seward Park, year in and year out, until we won.

## CHOICE OF MATERIAL FOR PAVEMENTS

THE sub-committee of the Glasgow (Scotland) Government was recently appointed to report on the paving of streets, and in the course of investigation visited most of the principal cities of England and the Continent. The report concerning their recommendations for Glasgow contains many things of interest to other cities of the world. Thus in view of the widening and improvement of streets in Glasgow, the committee recommends the construction of a well ventilated conduit in which are to be placed all service pipes, cables and wires required for public or private purposes, including gas, water, electricity and telephone pipes and mains, and all service of the Post Office department. Branches should be carried to the curb lines so that connections may be made by abutting property owners when desired. The whole expense of the undertaking should be paid by the city, the abutting property owners paying their share when they make use of the connections. Sewage should not be introduced into the conduit but should be conveyed into a sewer entirely independent, and any necessary connection between the two should be carefully trapped.

In streets without railways in the business sections of the city and in main streets throughout the suburbs where a continuous traffic is sustained and where the gradient is not greater than one in fifty-five, the committee recommends the use of asphalt pavement. In such streets where the gradient is between one in fifty-five and one in forty, the paving should be of hard wood, and in the same kind of streets where the grade is steeper than one in forty, the paving should be square granite blocks. If streets railways run through the kind of street described where the grade is one in forty or lighter, the paving should be of asphalt or hard wood. If the grade be steeper than one in forty, square dressed blocks should be employed. Streets in the central or residential districts of the city where there are no street railways and where the traffic is light, should be paved with asphalt or hard wood unless the grade be so steep as to require a rougher material. In suburban streets of importance, with or without rail-

ways, the paving should be asphalt, the remaining streets in the suburbs being paved with ordinary macadam.

Wherever smooth pavement is adopted all gulleys and manholes should be trapped so as to prevent detritus being carried to the sewers. Provision should also be made for adequate ventilation of the sewers. It would be expedient, if not necessary, that extensive and frequent sanding of smooth pavements be carried out by the city authorities, and as in London and other cities, junctions of streets, or other suitable places should be utilized for storing the sand or gravel to be used.

The committee recommends that the former practice as regards the ordinary paving with granite should be made applicable to the paving of streets with asphalt or other material; that is, the city should be divided into districts and the city government should make contracts with responsible firms for the paving of such streets within the districts as may be determined upon from time to time by the committee in charge.

Where smooth pavement is adopted, all the pipes and cables of the city departments, post office and others, should be systematically laid in lanes or in foot paths, not in the roadway, as at present, and the committee recommends that the city maintain those pavements in which pipes or cables are laid, the city having the power to make an annual charge on the departments or companies whose pipes or cables are there laid, to cover the cost and maintenance of the pavements. As a condition of taking over the burden of maintenance, the city should arrange with the proprietors for the acquisition of the whole surface of the pavements, upon such pavements being put in good order by the proprietors. In new streets the various departments of the government and companies should be compelled to lay their pipes in foot paths and not in the roadway, and provision should be made for future requirements or developments of the various pipe systems laid.

# A PRIMARY SCHOOL OF CITIZENSHIP

**The Need Imperative—The Plan Outlined—New York Establishing Such a School—The Best Way to Make Good Citizens**

By James C. Bayles, M. E., Ph.D.

ARRANGEMENTS are now well advanced in the Borough of Manhattan, New York, looking to the practical trial on a large and intelligent scale, of the experiment outlined in the succeeding paragraphs of this article. It is to be worked out systematically, along the lines indicated, and will culminate in whatever may be found to be the standard of maximum utility.

To the great inflow of immigration pouring into the United States, at present largely from countries bordering on the Mediterranean, attracted by the announcement of abounding prosperity and the opportunity for better wages or larger profits than could be had at home under any conditions, the native citizen stands in an attitude still somewhat indefinite. He does not know whether to regard it as a benefit or a danger. If equally distributed throughout the country, even a larger immigration than Southern Europe could maintain might be absorbed and assimilated quickly and without disturbance to our political system. Experience has shown it to be comparable to a great crucible in which the most incongruous and antipathetic elements are sooner or later fused and alloyed into a compact nationality having the high and distinctive characteristics which President Roosevelt recognizes in the people of the Northwest. But it is not equally distributed.

#### WHY SUCH A SCHOOL IS NEEDED

Every large city, and especially the country's principal *entrepôt*, New York, acts, in a sense, as a sedimentation basin in which is caught and retained a great deal of what must be regarded as very crude material for the manufacture of American citizens. It is easier for immigrants of the inferior class to make a living in cities where colonies of their own nationalities are already planted, than in the country where their ignorance of our language and of our customs would be a serious handicap. If they have any mechanical skill it is rarely of the kind which is needed in the rural districts. If they have the trading instinct and desire to live by merchandising, the only profitable fields open to them are in or near the great centers of population. There the ways leading to full citizenship are well lubricated, for their votes are needed. They make declaration of intention through an interpreter, or take out papers they cannot read, after making oath to they know not what, and are then eligible for licenses to peddle, vend and hawk such wares as may be sold in a small way from basket, tray or push cart, to employment on public works controlled by political influence, and to all the privileges and immunities of citizenship. Thus are built up the colonies, Semitic and Aryan, of the teeming East Side of New York, and thus are made the votes which from time to time surrender New York to an "organized conspiracy of public plunder." The votes of such colonies are easily influenced by demagogues of their own nationalities through inflammatory protests against what are regarded as oppression and undue restraint of individual and class liberty. They are promised privileges and immunities inconsistent with the public interest, and in the enjoyment of which under a lax municipal administration they become easy victims of the organized "graft" of police blackmail. When this becomes too oppressive they revolt and assist in electing a reform administration. Under it the effort to effect a just and equitable administration of the law seems to them even more oppressive than the granting of dispensations for revenue—probably because it is made to appear so by harsh measures taken by those who seek to make all law odious—and they lend a ready ear to the specious arguments of the ward "bosses" who make it appear that through reversion to the most abject servitude to corrupt politicians a larger measure of individual liberty will be secured. Ultimately discovering that they have been betrayed and that the conditions of their life and environment have become intolerable, they again become amenable to good influences and aid in driving their mercenary oppressors from office. This surging of a blind and unreasoning numerical majority from one extreme to the other, surrounds the

work of municipal upbuilding with many and discouraging difficulties. It will probably continue until the ignorant immigrant, who become a citizen *de facto* before he has ceased to be an alien *de jure*, is molded by education and experience into an integral part of the body politic, and learns that his interests are best served by some sacrifice of what may be his individual preferences for the general welfare. No doubt the pendulum swing of political action and reaction from the cause noted is gradually shortening, but the establishment of municipal politics in stable equilibrium on the basis of the public good is still remote, and only the eye of an optimistic faith in humanity can discern it afar off. The second or third generations of such immigrant families solve the problem for themselves; what to do with those who came here as adults in multitudes, is a grave problem for which no satisfactory solution has yet been suggested. How shall they be made to understand that whatever promotes social order, establishes the law in popular respect and upbuilds the institutions of a truly democratic form of government existing by and representing the will of the people, contributes in the largest degree to their own welfare?

#### WHAT NEW YORK IS DOING TO MEET THE DEMAND

Of the many suggestions, academic and practical, which have been made to this end by public spirited citizens, the most useful would seem to be that now taking shape in New York, and in which the co-operation of the borough presidents and heads of departments is expected. The underlying idea is that the quickest and shortest method of educating embryo citizens in their duties and obligations, is to make them acquainted with their rights. There is much in this suggestion to invite thoughtful consideration. The existence of a right implies the existence of a duty. The whole system of equity is based upon a method of double entry in which each credit is offset by a corresponding debit, and the balance of the two sides of the account is maintained only so long as these opposed entries represent equivalent values. If a man whose education in citizenship is undertaken can be made to understand what are his rights, he will discover by intuition that when these rights are invaded a wrong has been committed against him by some one, and if he acquires the courage to assert and defend his rights he will not only learn therefrom that others have rights like his own, but will become careful how he invades them lest the penalties he has invoked for his own protection become operative as against himself.

To learn what are one's rights in a city like New York is not an easy matter, even for the native born citizen, who has imbibed a general idea of the scheme of state and municipal legislation, and though perhaps unable to quote the text of any law or ordinance, knows in a general way that whatever is right and proper is legal and whatever is wrong and improper is illegal. From his reading of the newspapers he has probably acquired some familiarity with the statutes as interpreted by the courts and in editorial discussion. But to advise himself specifically as to what are his rights is an undertaking which he might very well hesitate to attempt, unless he has plenty of time and a good knowledge of the method of procedure in such matters. For example, what are the rights of the citizen as regards the police force of New York? What may he direct a policeman to do and insist that he shall do it? In what must he obey a policeman, and to what extent may he with safety and propriety bid him "go to"? To answer these questions, even along broad lines of everyday experience, without touching any of the unusual incidents which might arise in the whirl of a great city, would involve a laborious search of the statutes and ordinances in such cases made and provided. Comparatively little of the results of such a search would possess interest for the average citizen. All that he needs to know for his guidance in his daily intercourse with the police in the streets, could be told in a pamphlet of a few pages. It would greatly facilitate police reorganization.

## WOULD SIMPLIFY POLICE DUTIES

The confident assurance that the alien immigrant does not know his rights, and is not in a way to learn them, gives the policeman a purely fictitious power which he does not always use with discretion, and still more seldom with consideration. It pleases him to be regarded, not as the servant of the people, but as a superior being clothed with the majesty of the law, and privileged to treat the generally harmless and good-natured crowds of the streets as cattle, to be ordered about as suits his purposes, and, if reluctant, to yield instant and unquestioning obedience, jostled, or it may be, "fanned," with his formidable truncheon.

His methods are frequently arbitrary and unreasonable. He becomes impatient of the stolid inertia of the people who think slowly, and who do not understand what is wanted of them. Instead of being what he is, in fact, and should be in the popular comprehension, the guardian of the rights and interests of the common people, he is likely to become a satrap of an intangible tyranny whose hand is against every man and against whom every man has a grievance which forbids mutual respect and confidence. Perhaps the policeman is not so much to blame for all this as might appear. He is held to strict accountability for the enforcement of ordinances which the people he deals with do not understand. He cannot explain to, or maintain argument with, those who do not speak the same language, or think in the same way as himself. It is natural that he should come to be regarded as an agent of petty oppression, and that his good offices as a guardian are seldom called into requisition. It is also easy to understand why he takes a great many unwarranted liberties with the ignorant poor, since to take them offers the path of least resistance in carrying out his instructions. If intelligible circulars or pamphlets were placed at the command of the people who now regard the policemen as an unapproachable despot, answerable only to still less responsible superiors, showing what his relations to the citizen really are, and how he has duties which he may be required to perform when called upon, the whole relation of such people to the police force would change, and the first lesson of citizenship would have been learned. Nothing of the kind has ever been prepared, even in English. When it is should be translated into Italian, Yiddish, Russian, and every language represented by an established colony of alien residents. Not many copies would be needed to accomplish a great deal of work. A new gospel of emancipation from official oppression, or what is so considered, would be eagerly discussed and debated, and its message would soon reach all for whose education it is intended.

The relations of the Board of Health to the nascent citizen from Southern Europe might be made much better than they are. At present it is regarded as a meddlesome agency for interfering with those whose habits and customs are different from those of the country to which they have come. The domiciliary visits of its inspectors are resented as unwarranted intrusions, its orders are regarded as imposing great and unnecessary hardships upon those against whom they are directed, and its prosecutions for violations of ordinances, especially when such violations grow out of the observances of ceremonial rites, having to do with the feast of the Passover and the Day of Atonement, seem like wanton religious persecutions. This is in the highest degree obstructive to a good administration of the Health and Tenement House Departments. The Sanitary Code is a compendium of the municipal health law, and in it one may find a definition of nuisances "dangerous to life or detrimental to health." It is a considerable little volume, necessarily containing a great deal the average citizen, and especially the citizen whose point of view gives him a very narrow horizon, does not want. For the beginner in the study of civic rights and duties it is anything but a primer. For his purposes a digest of such sections as define the privileges and obligations of the householder in his relations to his neighbors and the community at large, would be immensely more useful. It should be duplicated in many languages, and should explain to one who suffers from a nuisance the simple and orderly method of procedure which

will set in motion the agencies which will give him relief and protection.

The rights of the citizen on sidewalks and at street crossings, as against the drivers of vehicles and all who molest him or make him afraid, or who impede his progress by unlawful obstructions of merchandise, building materials, and the like, are defined in numerous laws and ordinances filling many books. The most complete and generally useful compendium of this and kindred information is a book of some 400 pages in fine type, printed as a private venture, and sold at a price which places it beyond the reach of those who cannot afford to pay for a book of reference as much as would feed a small family for a week. For judges, public officers, and lawyers it is probably invaluable; for general use by citizens seeking information as to their rights it is impracticable. All of it which directly and immediately interests the householder might be compressed into a pamphlet which could be sold for five or ten cents, and in that shape be vastly more useful than if following the typical verbiage of the statutes. The building law is accessible to those who wish to familiarize it, but its essential provisions have not been summarized. The laws and ordinances relating to public parks and places, and the rules of the Park Department which regulate the public use thereof, are to be had in one shape or another, but not in a shape which will tell the average citizen in few and intelligible words what he and his children should know for their own advantage and the public good.

## THE BEST WAY TO MAKE GOOD CITIZENS

This leads up to the suggestion that, if the best way to make good citizens is by the inductive method of instruction, in which, through a knowledge of the rights which interest them, may be imparted a knowledge of the duties devolving upon them, which, in the abstract, do not interest them, for the reason that they do not understand that such duties and obligations are the safeguards of their social, economic and political rights, they must be made to know what their rights are, and how to insure that they will be respected. The first step in this direction would seem to be the compilation of convenient and inexpensive digests of statutes and ordinances, defining individual rights, their translation into as many languages as may be needed to reach the alien colonies of our crowded districts, and their distribution among the leaders of their social and political activities; to clubs and societies and to the heads of local religious organizations. The next step would seem to be the establishment of a polyglot Bureau of Information, or possibly several, to which any citizen or resident of the city who wishes to be advised as to his rights and duties, and to learn what to do, and how to do it, under any given conditions, may go for advice and directions. If he has complaints to present, to one or other of the city departments, he should there be told how to do it, and, if necessary, assisted in formulating his grievances, for which purpose blank forms might be prepared. In such Bureau the laws and ordinances would be available for consultation, and its purposes would be to assist everyone who needed information or advice on any subject connected with his rights or duties, either by answering his questions or sending him where they will be answered authoritatively.

There is food for thought in this plan for all who are charged with civic responsibility, in great or small centers of population. Our standards of citizenship are not so high that they cannot be raised with advantage, and no other way of raising them has been found than by popular education. The average citizen resents didactic instruction in his duties; in theory, at least, he is eager to learn his rights, and education progresses along the lines of least resistance when it imparts to the recipient knowledge which he wants, and is desirous of acquiring. City officials who are anxious to be recognized as leaders in their respective communities, and to conclude and make permanent mutually satisfactory alliances with those least easily reached by means hitherto employed, may find in the foregoing suggestions the basis of a plan which will repay elaboration with reference to local conditions.



## HOW TO LAY BRICK PAVEMENTS

**Model Specifications Used in Rochester—Many Miles of Brick Pavements in Good Condition After Years of Hard Service**

THE brick paving industry is only in its infancy. It is not the fault of brick as a paving material that there are not more miles of brick streets in American cities than there are of those paved with asphalt, for the brick pavements which have been properly laid have given splendid service and excellent satisfaction. Vitrified brick has never been considered a material that would stand up under heavy traffic but, nevertheless, it has given relatively better service under heavy traffic than Trinidad Lake asphalt pavements laid by the trust. For many years brick has been more popular in the West than in the East, which has been largely due to the fact that most of the plants have been located in the West. This material, however, is rapidly encroaching upon the preserves of the asphalt trust in the East and is making rapid gains. For instance, Syracuse, which, a few years ago, was in the firm grasp of the asphalt trust and laying four and five miles of streets to one mile or less of brick pavements, is now laying four or five miles of brick pavements to one or less of asphalt. The trust has lost much of its prestige through bad management and imperfect pavements. Happily for American cities, while the trust is going to pieces, honest and efficient asphalt paving companies are springing up here and there about the country, which are laying asphalt pavements that give entire satisfaction.

But, in the meantime, brick pavements are more in demand and city engineers are laying them with greater care than ever before, profiting by some of the mistakes which have been made in the past. Among the specifications which have been sent to the MUNICIPAL JOURNAL AND ENGINEER none contains a larger number of good points than the specifications prepared under the direction of City Engineer Fisher, of Rochester, N. Y. A digest of these specifications follows:

"Brick pavements will be laid upon a 6-inch concrete foundation unless otherwise specified. The grading and foundation will be prepared as specified herein.

### SAND CUSHION

"Upon this foundation a coating of approved clean, sharp sand is to be spread to the thickness shown on the cross-section; when no thickness is shown the depth of sand will be one inch. This sand must be perfectly dry when laid, made so by artificial heat if deemed necessary, and shall be rammed, or rolled, with a suitable approved hand roller, capable of being operated by four men, and then struck off evenly and smooth, by means of an approved template, to the true cross-section of the roadway. The bricks are to be laid thereon as soon as possible after the surface of this cushion coat has been rammed or rolled and brought to the required section.

"All bricks shall be uniform in size, hardness and toughness, whole, square and straight, with smooth and true faces, tough, free from brittleness and cracks, clear ringing, hard burned, burned entirely through to the point of vitrification and shall not absorb more than 2 per cent. in weight of water after being broken in two pieces and immersed in water twenty-four hours, and shall pass satisfactory abrasion and impact tests in comparison with the best paving bricks now in use in this city. Preference may be given to such bricks as have been used for street

paving purposes for a length of time sufficient to test their wearing qualities in actual use and shown to have worn well and satisfactorily.

### METHODS OF INSPECTION

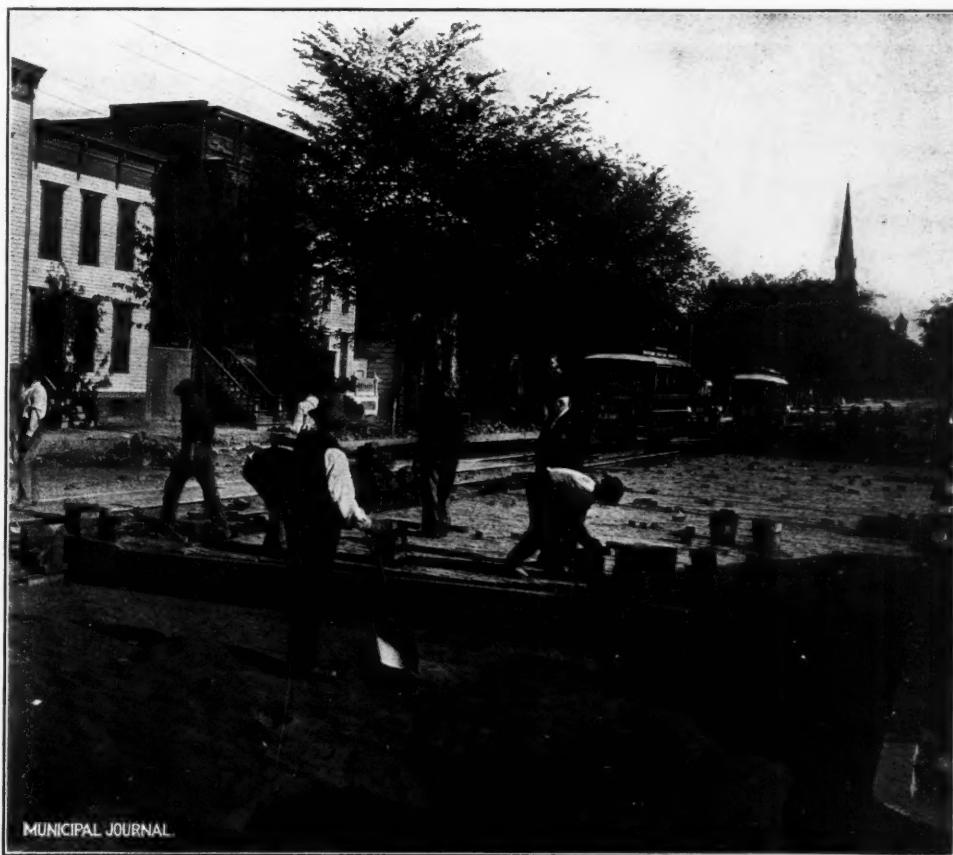
"The bricks will be carefully inspected after they are brought on the line of the work, and all bricks which, in quality and dimensions do not conform strictly to these specifications, will be rejected, and must be immediately removed from the line of the work. The contractor will be required to furnish such laborers as may be necessary to aid the inspector in the examination and culling of the bricks. The contractor will then be required to pile such bricks as may have been approved, neatly, on the front of the sidewalk, and not within three feet of any fire hydrant and in such a manner as will preserve sufficient passageway on the line of the sidewalks, and also permit of free access from the roadway to each house on the line of the street.

"It being expressly understood that the work is to be prosecuted in sections of not less than the space between any two intersecting streets, and that these provisions relative to the hauling, inspection, and removal and piling of bricks shall apply to the work on each of said sections on the whole line of the work.

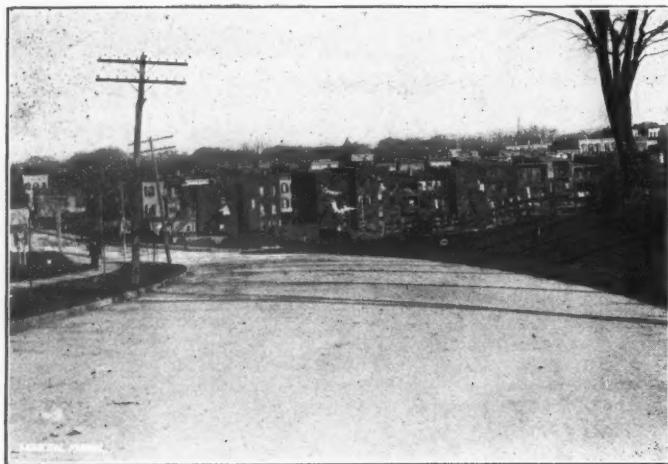
### LAYING THE PAVEMENT

"Upon the bed of sand prepared as aforesaid, the bricks must be laid in courses either at right angles or at an angle of about sixty degrees with the line of the street as may be directed by the Commissioner of Public Works and City Engineer, except in intersections of streets (including the space within the railroad tracks) and except in special cases where they shall be laid at such angle, with such crown and at such grade as the Commissioner of Public Works or City Engineer may direct.

"Each brick must be set vertically on its longest narrow edge,



LAYING BRICK PAVEMENT ON A MUCH USED STREET IN ALBANY, N. Y.



A FINISHED BRICK PAVEMENT IN ALBANY, N. Y.

and the successive courses shall be placed in as close contact to each other as possible at sides and ends: alternate courses breaking joints at least three inches, and every tenth course, for its full length, shall be laid to a line. No broken or parts of brick shall be allowed to be used, except where necessary to end a course, in which case nothing less than half bricks properly cut and fitted shall be used. Care must be taken in breaking and trimming bricks for this purpose so as not to check or fracture the part to be used. Joints to be cut square with the top and sides of the brick. The work must be done by experienced men with proper tools. In no case will sand be allowed between or on the surface of any bricks. All joints must be kept clean and open.

#### RAMMING OR TAMPING

"After the bricks have been placed in accurate position they must be thoroughly settled to the correct grade of the surface of the completed pavement, by a system of ramming or tamping with heavy mauls used on two-inch planks, or with wooden-faced mauls. Each brick must be driven to a firm and solid bed, and when they have been thoroughly settled into place the surface of the pavement thus completed must be even and smooth throughout and moulded to conform to the wells of surface sewers, street and alley intersections, drainage details, and the grade lines established by the City Engineer. During the final ramming the pavement shall be tested with a straightedge and template, and any unevenness must be taken out and made true to the required grade level and cross-section.

"If required by the said Commissioner of Public Works and City Engineer the whole surface must be thoroughly rolled with a suitable roller weighing not less than five tons, and while this rolling is in progress; the courses must be again strengthened, lined up, all damaged and defective brick removed, and the surface left even, smooth, compact and ready for the filling.

#### PREPARATION FOR JOINT FILLER

"After the pavement has been completed in accordance with the foregoing specifications, it shall be thoroughly cleaned by sweeping, and then each and every joint must be filled to the surface of the pavement with hot paving pitch and hot sand; the pitch and sand being poured simultaneously from separate vessels having small spouts, in such a manner as to thoroughly mix and form a bituminous mortar or concrete. After the joints have been properly filled a light sprinkling of sand shall be spread over the portion of the pavement completed.

"The paving cement to be used in filling the joints as herein provided

shall be a paving pitch of the best quality to be formally approved in writing by the Commissioner of Public Works and City Engineer for use upon the particular improvement. It shall be delivered on the work in lots at least one week before being used, in order that the necessary analysis and examination may be made by the city engineer. In addition to this the contractor must furnish the City Engineer with the certificate of the manufacturer or refiner that the materials are of the kind specified. The contractor must provide a suitable gauge on each tank to show the temperature of the composition. It must not be used at a temperature of less than 300 degrees Fahr., nor until the stones are completely dry and the gravel filling hot.

#### CEMENT FILLING

"The Commissioner of Public Works and the City Engineer may order the contractor to fill the joints in any part of said paving with a grout composed of one part Portland cement, one part of fine, clean sharp sand, instead of paving pitch. This order must be in writing.

"The cement and sand shall be mixed dry on a suitable platform in small quantities as required for immediate use. The mixture shall then be transferred in a dry state to a suitable mixing box, when sufficient clear water shall be added to make the grout of the proper consistency, when thoroughly mixed and stirred. The grout must be rapidly and constantly stirred in the box and applied to the pavement in such a manner as said Commissioner of Public Works and City Engineer deem best for the work, and rapidly swept into all joints with proper brooms adapted for the purpose. A trowel or saw-blade is to be drawn through the joints when there is width sufficient to receive it. No settling or residue left in the box will be allowed to be used or dumped upon the pavement.

#### GUARANTY

"The contractor, in consideration of the prices herein stipulated to be paid and received for the construction of said pavement, hereby agrees to maintain and keep said pavement in good repair at his own expense for and during a period of five years from the date of the final acceptance of the work, so that at the end of said period said pavement shall be in good surface and condition, and free from any defects that will impair its usefulness or durability as a roadway: it being understood that said maintenance and repairs shall be performed faithfully and promptly at all times, when required by said Commissioner, and in accordance with the following provisions:

"Said contractor shall remove and properly replace with sound material all paving bricks which may be found soft, unsound, broken, or disintegrated; also take out and properly replace all bricks which may have worn unevenly or settled so that their top surface is more than one-fourth inch below the top surface of any adjacent brick;



MUNICIPAL JOURNAL

PREPARING SAND CUSHION AND LAYING BRICK PAVEMENT IN ALBANY, N. Y.

also take up and properly replace all portions of the pavement which may have worn unevenly or settled so as to bring the surface thereof more than one-half inch below the general surface of said pavement, as determined by measuring from a straightedge four feet long and placed in any direction thereon; also replace with new and sound brick, as above specified, all portions of said pavement which may have become rough by reason of the chipping or breaking of the edges of the brick so as to produce joints exceeding one-half inch at a point one-quarter inch below the top or surface of the brick, or by reason of the rounding of the tops of the brick, so as to form in cross-section curves or more than one-fourth inch versed-sine.

"He shall also maintain the general surface of said pavement in good condition, so that no pools of water more than three-eighths inch deep at any point in the roadway, or more than one-fourth inch deep at any point in the gutters, shall exist therein at any time. He shall also remove and replace with new brick any portion of the pavement where the bricks are worn to a depth of less than three inches, even though the pavement complies in other respects with this guaranty.

"It is further agreed that if, in the opinion of the Commissioner of Public Works, any repairs are required during the term of this guaranty, the said Commissioner shall notify the Contractor to make such repairs by written notice, to be served on the Contractor either personally or by leaving said notice at his place of business, or residence, or with his agent in charge of the work. Said Contractor shall immediately complete said work to the satisfaction of the Commissioner of Public Works, and in case of failure or neglect to do so on his part within two days, the Commissioner of Public Works may proceed to make such repairs, and the expense thereof shall be paid for from the

funds reserved under this guaranty, and that failing to be sufficient, the party of the first part, and his, its, or their sureties, will make good the deficiency, or the said city may, at its option, instead of using such percentage, or any portion of it, bring and maintain an action upon the guaranty bond to be given by the Contractor, and in that manner secure the moneys with which to pay such expenses.

"It is, however, understood that the temporary repairs may be made during the winter when it is not practicable to make permanent repairs; the permanent repairs to be made as soon as the weather permits.

#### RESTORE PAVEMENTS OVER TRENCHES

"The Contractor further agrees that he will, during the same period, lay and restore the pavement over trenches made for carrying sewers, water pipes, or gas pipes, or any other sub-surface pipes or conduits, for the building or laying of which permits may be issued by the Commissioner of Public Works, at a price at such time to be mutually agreed upon, but which price shall not exceed the following rates per cent., added to the within contract price per square yard for new pavement laid, to wit: For amounts of ten square yards and under, in one order, not more than thirty per cent.; for amounts over ten and not exceeding fifty square yards, in one order, not more than

fifteen per cent., and for all amounts over fifty square yards, in one order, the price shall not exceed ten per cent. greater than the contract price for similar work. The amount referred to as 'in one order' shall be understood to include all the openings referred to or embraced in one and the same notice; the aggregate of such openings shall come within the number of yards specified, and will be designated as special repairs.

"It is understood that the guaranty covers all the work over the trenches as above specified for the remainder of the term of guaranty.

"The term 'brick pavement' includes the sub-structure as well as the wearing surface, also all fixtures relating to water pipe or sewers, paid for as part of the pavement."

The present condition of the brick pavements in Rochester is described as follows by City Engineer Fisher:

"Fulton Avenue, laid in 1890 with Canton-Malvern brick, is quite uneven in the centre, on account of the wear of the brick and also on account of some settlements. The pavement, however, is good, with some repairs, for several years.

"Oxford Street, laid in 1890 with Malvern-Clay Company brick, is in fair condition. The traffic is light on this street.

"South Goodman Street, laid with Canton-Malvern brick in 1890, is in good condition. Light traffic.

"East Avenue, laid with Canton-Malvern brick in 1891, pitch joints, is in bad condition for more than half the width of the street in the central portion. This street has a very heavy traffic. Considerable repairs were made on the street last year, and the street should be resurfaced within a short time.

"Troup Street, from Reynolds Street to Lamberton Park, laid with Canton-Malvern brick in 1891, the same as East Avenue, is in

good condition and has had no repairs. This street has a very light traffic.

"Andrews Street, laid with Parto Block in 1893, is in fair condition although somewhat rough. This street has a moderately heavy traffic.

"Glasgow Street, laid in the same year with Syracuse brick, is in very good condition. This is a residence street of light traffic.

"Ambrose Street, laid in 1895 with Syracuse brick, is in good condition, with the exception of a few cracks due to a settlement of the sewer.

"Dartmouth Street, laid with Hallwood Block in 1895, is in very good condition. This street has a light traffic.

"Lake View Park, from Lake Avenue to Pierpont Street, laid with Hayden Block in 1898, is in good condition, with the exception of some settlements in the street. This pavement did not have a concrete foundation, but was laid on broken stone.

"Main Street East, laid with Hornellsville brick in 1898, is in first-class condition. This street has a moderately heavy traffic.

"Spencer Street, laid in the same year with Johnsonburg brick, is also in good condition. This street has a light traffic.

"The stress laid subsequent to 1898 are all in very good condition."



ANOTHER VIEW OF ALBANY'S BRICK STREETS

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**More About the Asphalt Trust**

THE asphalt trust continues to tumble about in troubled waters, the latest development being the voluntary resignation of Mr. John M. Mack as a receiver. Since that event a decree of sale has been issued by the United States Circuit Court under Judge Andrew Kirkpatrick, ordering that all the asphalt securities, properties and assets of whatsoever nature, be sold on such date as shall be fixed by Mr. Henry Tatnall, sole remaining receiver.

In commenting upon Mr. Mack's connection with the trust and the general situation the *North American*, of Philadelphia, recently said: "He hopes to free himself from entanglements with old matters and at the same time, which he deems more important, to place himself in a position to take the presidency of the new \$31,000,000 Asphalt Trust it is intended presently to organize.

"Every move is being carefully made to carry out the plan agreed upon to put Mr. Mack again in control of asphalt affairs. Henry Tatnall continues as receiver of the bankrupt companies to perform all necessary duties and acts incident to the sale and their final winding up. It is the purpose to do all this as fast as the legal wheels can be turned.

"The report of the earnings presented by the receivers is forced to bear out the estimate of earnings they made under date of June 23 last, when, to sustain the reorganization plan decided upon by the Biddle and Harrity committees, they named \$700,000 as the net earnings that could be safely counted upon from the new company in operation. The net earnings during 1902 of the Asphalt Company of America and the National Asphalt Company from all their underlying companies are stated to have been only \$552,755.93. By a juggling of figures, losses of \$222,653 sustained by two of the subsidiary companies are added to this sum, and in this way the real earnings from the conduct of the year's business are made \$775,408.93.

"From subsequent statements in the report it appears that the underlying companies were so much in need of working capital that even the \$552,756 was not available to be withdrawn as dividends. Cash accounts presented by the receivers therefore include only current receipts and disbursements. For both companies they held on March 30 a cash balance of \$65,961.48. Between November 3, 1902, and March 30 the cash receipts of the Asphalt Company of America

were \$32,263.84 and the disbursements \$358.80. Similarly for the National Asphalt Company the receipts were \$35.36 and the disbursements for office salaries, etc., \$6,486.70.

"It will take \$700,000 cash annually to pay the dividend on the \$14,000,000 of preferred stock of the proposed new Asphalt Company. On a total business of \$13,388,000 done last year there was scarcely four per cent. actual and less than six per cent. assumed net profit. This is exceedingly small for industrial business.

"The yardage of asphalt work in 1902 was 4,082,612 yards, slightly more than for the previous year. Uncompleted work carried over into this year is given at 1,285,021 yards, against 638,531 from 1901."

It will be seen by the foregoing that the danger of American cities falling again into the hands of the asphalt trust, as referred to in our April issue, is not altogether imaginary. We feel that American cities have paid tribute long enough to this gigantic fraud, but in order to avert such a calamity it will be necessary for all opposing forces to combine their efforts.

We have received a flood of letters approving our editorial on the "Asphalt Trust" in the April issue, from some of which we quote. One consulting engineer had this to say:

"I have read the editorial with much interest. Every word of it is true. I have thought it was about time that some journal had the courage and the nerve to step out into the open and tell the public, the municipalities and public officials, the truth about the asphalt trust. I congratulate you in doing it and doing it right. The best way to kill such evils is to give them publicity. If the people all over the country know the truth and then get swindled and duped, it is their own fault, but if they do not, is it to be wondered at that they are duped and swindled by the oily tongued agents of the trust? If a city should be infested with a gang of fire-bugs, murderers or robbers, and the newspapers failed to state the fact to the public, they would be derelict in their duty, but until you spoke out, publishers seem to have been afraid to tell the public of the presence of this nefarious organization that was preying upon their citizens."

Another correspondent remarks: "Your editorial on the asphalt trust we consider the best presentation of the facts that we have ever seen, and we wish to congratulate you upon it. We certainly trust that you will continue to show up the facts in the case, as they are worth reading."

"We are agreeably surprised," writes the president of one of the large independent asphalt paving companies, "to find that a trade journal has honor and integrity enough to attack what, in our opinion, is one of the greatest robbery organizations of the present age. It lends courage to us who are endeavoring to struggle along in a legitimate way and we wish you and all other journals of this kind success."

An official in the far West writes: "Your editorial on the asphalt trust is a severe arraignment, yet it is a calm and dispassionate statement. The trust has certainly started out with the policy, as you state, to rule or ruin, but with a few editorials such as yours, freely distributed among city officials, I believe they, the city officials, will realize that it is to their advantage to ignore such unbusinesslike rapacity and to encourage those who are disposed to do good work."

**Immense Expenditures for Paving**

We recently addressed the city engineers of those municipalities having a population of 25,000 and over, asking for information as to the probable expenditures for paving of various kinds and for repairs for the current year; we also asked the governors of the various states in the Union for information respecting the probable expenditures for road improvement during the current year. We failed to receive responses from all the cities and states, but sufficient data was secured upon which to base a careful estimate.

We were greatly surprised to learn of the large sums which were to be expended during the current year for pavements and good roads. For instance, from eight to ten millions of square yards of new pavement will be laid in the larger cities of the country at a total expense of from \$15,000,000 to \$18,000,000; from four to six millions of square yards of various kinds of pavements will be repaired at an expense of from \$8,000,000 to \$10,000,000, and about

\$15,000,000 will be expended throughout the United States for good roads.

When it is remembered that there are only one hundred and sixty-seven cities in the United States having a population of 25,000 and over these figures will seem the more astonishing. Among the cities St. Louis leads with 875,000 square yards of contemplated new work; New York follows with an aggregate of about 700,000 square yards; Cleveland, with 504,000 square yards; Syracuse, with 297,000; New Orleans, with 251,000; Washington with 170,000, and Buffalo with about 100,000. If American cities maintain the present rate of paving improvements for the next decade they may then be properly called the best paved cities in the world.

It is curious to note the decline in popularity of Trinidad Lake asphalt pavements. But the cause is no mystery to us, for that is accurately indicated by the numerous complaints about the rapid disintegration of Trinidad Lake asphalt pavements that have come to us from various parts of the country, together with photographs which have graphically shown how the pavement had rotted and gone to pieces. If the new trust succeeds in obtaining its share of the large amount of asphalt paving we believe it will have to adopt the use of a better brand of asphalt than that known as Trinidad Lake. We see no objection to following the practice in European cities in the use of rock asphalt. While the municipal authorities over there have had a longer experience and are more strict and thorough in their methods of inspection, the real reason for the continued popularity of asphalt paving is found in the kind of asphalt used. If the trust continues to use Trinidad Lake asphalt the independent companies will have little difficulty in driving the trust out of the field, a result which would be more quickly effected if a federated union among themselves could be brought about.

Brick pavement is becoming more popular as time goes on as it is rapidly demonstrated to have good wearing qualities. Its noisiness is its most objectionable feature, but this is counteracted to some extent by careful methods of construction. Brick manufacturers claim that they could sell more than their annual output, but we believe that the business could be tripled within a short period of time if legitimate publicity methods were employed by the brick makers.

The most astounding growth among paving companies that this country has ever known is that connected with the development of the bitulithic pavement. Starting with an unknown pavement, although backed by the combined intelligence, experience and training of a group of gentlemen who are without peers as to their practical experience in the art of laying pavements, this business has been developed so rapidly that an aggregate amount of several millions of square yards will be secured before the season is over. This achievement has been made possible, first, by the good qualities of the pavement in question; second, by the wise management of its promoters, and third, by judicious advertising.

Wood paving is coming to the front again and overcoming the prejudice against it gained through the unfortunate experience with the old Nicholson and cedar block pavements. It has been for years one of the most popular forms of pavement in English and European cities. Several companies have invented patent methods of treating choice, selected blocks of wood and laid them with greater success than has ever before been attained with wood pavements in this country. From present indications there would seem to be a bright future for this kind of paving.

Medina stone block has superseded the use of Belgian and granite block in the East and is rapidly gaining popularity in the Western cities. It is the best kind of stone pavement laid to-day. It wears evenly and does not get smooth and round as granite or Belgian block.

So much depends upon climatic and other local conditions that it has been impossible to adopt all the successful methods employed in the construction of street pavements in the Old World. Therefore it has been necessary for city engineers to evolve their own systems and methods of laying the various kinds of pavements, adapting them to the conditions of the different localities. The immense sums which are annually expended for street improvements are sufficient evidence that the engineers are meeting with well-deserved success.

### National Municipal League

Most of those who addressed the National Municipal League during its last session at Detroit last month were optimists. They believed that the municipal situation in the United States is improving, and we agree with them, for, in our opinion, any one who takes a pessimistic view of municipal government in America in these days of rapid improvement would be a pessimist under the most favorable conditions possible—he would be a pessimist anyway.

The frightful scandals connected with St. Louis and Minneapolis were fully reviewed; the former by James L. Blair, Esq., and the latter by Mr. William A. Frisbie, city editor of the *Minneapolis Journal*. In drawing conclusions from the situation Mr. Blair said of St. Louis:

"Viewed from the standpoint of past experience, it is but one of those moral uprisings which from time to time visit every community. That it will be followed by a corresponding period of municipal depression no one can doubt, but it is equally sure that, with each upheaval of this kind, the standards of municipal administration are raised, and the alertness of public opinion to maintain such standards is distinctly increased. No man will contend that St. Louis is forever regenerated, but none will deny that its municipal conditions are definitely, substantially and permanently improved."

Mr. Frisbie, of Minneapolis, however, did not draw as favorable a conclusion about the reformation effected in his city, as he showed that there had been comparatively few prosecutions and only two commitments to state's prison. Public indignation had died down very largely, but there seemed to be a quiet determination upon the part of the voters to prevent a repetition of similar mal-administration.

The members of this association would have sufficient reason for rejoicing in the partial redemption of Philadelphia, which has been brought about by the election of a mayor of strong characteristics and one who will not give way to the pernicious Quay influence. The election of Mayor Weaver proves that something good can come out of even boss-ridden Philadelphia, and it is to the credit of the league that its secretary, Mr. Clinton Rogers Woodruff, was instrumental in bringing this to pass.

### American Water Works Association

THE American Water Works Association has taken on a new lease of life and entered a field of greater usefulness. The work of the association has been carefully looked after during the past year by Mr. J. M. Diven, its efficient secretary, in co-operation with the other officers. The scope of the association has been widened and the general interests of the water works departments throughout the country vigorously promoted.

The twenty-third annual convention of the association will be held at Detroit, Mich., June 23-26, inclusive, with headquarters at the Cadillac Hotel. It would be advisable for all members of the association to engage their rooms as soon as they have determined to be in attendance, as there will be a larger gathering at this convention than ever before and hotel accommodations will be in great demand. The city of Detroit is noted throughout the country for its warm welcome to all conventions of the kind and for this reason the attendance is likely to be unusually large.

One of the most attractive programs is being arranged for, part of which we are able to announce in advance through the courtesy of Secretary Diven. The subjects and contributors thus far decided upon are as follows:

"Some Peculiar Features of Foreign Water Supplies," illustrated with lantern, by Prof. W. P. Mason.

"Supply for Which a Water System Should Be Proportioned," by Stephen E. Babcock.

"The Necessity of a Systematic Inspection of All Services and Fixtures," by Henry C. Hodgkins.

"Water Rates in Large Cities and Classification of Accounts," by H. O. Nourse.

"Plumbing Rules and Regulations," by Dow R. Gwinn.

"Little Falls Filter Plant," by George R. Fuller.

"A System for the Purification of Water and Sewage," by John Jerome Deery.

"Water Used in Flush Tanks, School Houses and Other Public Buildings," by Howard A. Dill.

"A Simple Device for Testing Fire Hydrants," by Emil L. Nubling.

"The Corrosion of Metal by Electrolysis," by A. A. Knudson.

"Meter Location and Meter Accounts," by S. A. Charles.

"Discussion on 'Specifications for Cast-Iron Water Pipe,'" by J. T. Fanning.

"How to Prevent Water Waste," by William S. Crandall, Editor of the MUNICIPAL JOURNAL AND ENGINEER.

Contributions have been promised by R. O. Wynne-Roberts, Cape Town, South Africa; Dr. George H. Soper, and J. L. Ludlow, of Winston, N. C. A full program and further announcements will be given in our next issue.

### A Civic Organization Which Does Things

THE Civic Improvement League of St. Louis has issued its first annual report. Typographically the report is unpretentious, but a perusal of the reports of the various committees shows that a tremendous amount of work has been accomplished during the first year of its existence. We know of no civic improvement organization of its kind which gives a stronger evidence of usefulness than this. Any one may become a regular member by paying two dollars a year, or an honorary member for twenty-five dollars a year.

The objects of this league are: "To unite the efforts of all citizens who want to make St. Louis a better place to live in; to create a public sentiment in favor of better administration of municipal affairs, without in any way invading the domain of politics; to obtain a strict enforcement of all the ordinances now existing that are designed to make the city clean, healthy and attractive; to carry on a continuous campaign among the people, by lectures before social and fraternal organizations of all sorts, in which the advantages of a finer city are brought home to all; to the practical reforms that suggest themselves to even the most unobservant persons in their daily walks in the city—the league does not hope to transform St. Louis into another Paris at once—to disseminate literature on the general subject of city improvement, showing what has been done, or is being done elsewhere; to co-operate earnestly with every other organization that has similar objects, and will interest itself in the efforts for betterment made by residents in all sections of the city."

We believe that all cities not blessed with similar organizations should imitate the example of St. Louis.

### Control of Private Fire Supplies

At the last annual convention of the New England Water Works Association a committee was appointed to confer with similar committees from the American Water Works and kindred associations, including the various underwriters' associations, to agree, if possible, upon some adequate means of controlling private fire supplies, acceptable to all parties concerned, including therein a question relating to charges therefor and similar matter. This committee consisted of Messrs. F. H. Crandall, of Burlington, Vermont; R. J. Thomas, of Lowell, Mass., and Elbert Wheeler, of Boston, Mass. It invites correspondence and suggestions from all interested in a fair and equitable assessment of the benefit conferred in supplying fire protection by means of private fire protective systems.

The committee, so far as its investigation has progressed, finds that nearly everywhere, both in case of public and private ownership, it is customary to recognize the service of the water works to the public, in the line of fire protection. A frontage tax, hydrant rental, general appropriation, or an overdraft, serving as means to secure the assessment upon the property benefited, of the cost of fire protection.

The capacity of works necessary to supply the volume of water, required to make private fire services of value, the leaks habitually permitted on unmetered services, to which fire services are no exception, and the stealing, which not infrequently takes place from such services, all entail expense, to cover which, an assessment should be made upon the parties directly benefited.

As in the case of schedule rate assessment, the convenience or advantage accruing from additional fixtures, together with the addi-

tional cost of the service, constitutes a basis for increased assessment, so that, in the case of fire protection, increased benefit and increased cost of service, constitute a basis for increased assessment.

The individual profit enjoyed by the possessors of private fire protective systems, is far in excess of that enjoyed by the general public, to which latter benefit, by reason of payment of taxes, all are, to a reasonable extent, entitled.

As the Hon. J. O. Hall, of Quincy, said at the 1902 convention of the New England Water Works Association, "The individual taxpayer should not be compelled to bear any burden which, by any interpretation, can pass into an individual benefit to somebody else."

That private fire protection should yield the company, or department, furnishing it, a fair return, that a request for a service for fire or any other purpose, unaccompanied by willingness to furnish correct and trustworthy information as to the amount of water used or wasted through it, is unreasonable, and that the size of services, for whatever purpose used, should be kept well within the capacity of the system to supply without excessive loss of pressure, are conclusions easily and speedily reached. How to determine an amount constituting a fair return, is a question upon which the committee finds room for a greater difference of opinion.

### LETTERS TO THE EDITOR

#### Methods of Assessing Cost of Village Sewers

NEW YORK, N. Y., March 15, 1903.

Editor, MUNICIPAL JOURNAL AND ENGINEER:

We have under consideration the question of how best to assess the cost of a sewer system to be installed in the village of Mount Kisco, Westchester county, New York, and are desirous of having before us as many of the different plans of assessments for small towns as we can procure, for the purpose of sifting them and selecting that which we believe would best suit our conditions. We would appreciate it very much if you could put us in line with information of that kind where we can find it, in order that we may go and examine the records.

KELLOGG & SLOSSON.

In accordance with the above request, inquiries were sent the towns and villages in New York State having a population under ten thousand, asking for their plans for putting in sewer systems and methods of assessment. Thus far the following answers have been received:

Dunkirk, N. Y.—All sewers, single or system, are authorized by a vote of the Council, usually after an application from a fair proportion of the abutting property owners. Advertisement is made for two weeks, declaring the intention to build a sewer; bids are asked for one week and the contract is let to the lowest bidder. The work is done under the supervision of the sewer committee and the City Engineer, and no payments are made until the City Engineer certifies that the work has been properly finished. Payment is made by interest warrants anticipating the assessments to be levied against the adjoining property holders. About sixty days is allowed in which to pay the tax, which is assessed by special assessors pro rata to the property and the assessment includes the contract price and all incidental expenses, the city paying only for street intersections. City Clerk J. P. Groesch writes that the city is well sewered.

Glens Falls, N. Y.—According to Village Engineer George P. Slade, the sewer system of this village is paid for by the village at large, bonds being issued for the work. He states that a neighboring village, Sandy Hill, put in its sewer system, the village paying two-thirds and the rest was assessed on the abutting property.

Ilion, N. Y.—The village is bonded for the system which is paid for by general taxation.

Ithaca, N. Y.—On account of the situation of the city, lying as it does partly on the high hills and partly in a deep valley, it is necessary to pump the sewage from tanks sunk below the surface to an elevation sufficiently high to allow it to flow by gravity into Lake Cayuga. The mains were laid and the pumping station constructed from a fund

accruing from the sale of bonds, an assessment being made on abutting property at the rate of thirty cents per lineal foot. This charge was supposed to cover the actual cost of the laterals, where property was situated on a corner, only one front was assessed. Mayor George W. Miller suggests that in all cases of the laying of sewers, a competent engineer be interviewed so that the best possible system can be obtained.

*Lockport, N. Y.*—The combined system is used here. The sewers are built mainly, of salt-glazed, vitrified pipe, ranging from ten to twenty-four inches in diameter and some trunk sewers are of brick with a diameter of thirty-six inches. They are built to conform, as far as possible, to the natural grade of the land, or the established grades of the streets. The general fall of the sewers follows the natural drainage and no attempt is made to purify the sewage. Sewers are laid on a grade ranging from a fall of three inches to the 100 feet to a fall of ten feet in the 100 feet. Stone manholes are built at street intersections and at intermediate points where necessary. Six inch "Ys" or "Ts" are placed where necessary to receive house connections, the minimums size of pipes for main drains is ten inches and for house connections six inches. When a main or trunk sewer is laid, an assessment is levied on all property which may at any time drain into it, the amount of assessment being apportioned according to the benefits received. When a sewer is laid in a street so situated that no other sewer can ever drain into it, the cost is assessed on the abutting property owners in proportion to the frontage. City Engineer Julius F. Frehsee gives the following extract from the city charter bearing on these points: "the Common Council shall estimate as nearly as may be the expense of such improvement, and enter the same in its minutes; and thereupon the same shall be equally assessed upon the real estate in said city which the Common Council deems benefited by the said improvement, according to the benefits that may result therefrom, to be estimated, apportioned, assessed and determined by one of the assessors of said city who shall be specified in the ordinance therefore."

*Oneida, N. Y.*—Otto Pfaff, Mayor, writes that the sewer system in Oneida, which has a population of about 9,000 was installed partly by general tax and partly by local assessment on property benefitted. The trunk sewers were paid by general tax and the laterals by assessment. The plan in operation in Oneida is to assess half of the cost by the foot frontage rule and the other half according to the valuation of the property benefitted.

*Port Jervis, N. Y.*—In this village, according to the Superintendent of Sewers Theodore Ludlum (is a flush system for sanitary purposes only. It was installed about eleven years ago and has given entire satisfaction. There are fifteen miles of mains and laterals of vitrified pipe, ranging in size from six to eighteen inches. There are sixty-three automatic flush tanks and about fifty dead ends which are flushed with a wagon. Bonds were issued for the system, the interest and principal is raised by a general tax, and cost the village \$85,000. Mr. Ludlow considers that the village made a grave mistake in placing the manholes too far apart. They should never be more than 400 feet apart and 300 would be better.

*Rensselaer, N. Y.*—Mayor Lansing states that a general assessment is made for sewers. Previously the plan was to assess the cost of all sewers up to twelve inches on the abutting property and larger ones on the general assessment. In his opinion the general assessment plan is the better, as it obviates a lot of red tape in getting the consent of the property owners. He advises against making the sewers too small.

*Rome, N. Y.*—Bonds were issued for the whole cost of the sanitary sewer system, and the amount of the bonds when they become due and the semi-annual interest to be levied on all taxable property in the city. The shortest bonds were for ten years but none have yet come due. By an amendment the Water and Sewer Board was authorized to pay out of the receipts for water, the city owning its own plant, and for the past four years this has been done.

*Seneca Falls, N. Y.*—The plan in this village, according to President J. Spencer Purdy, is to submit a proposition, as directed under the General Village Law, and, when adopted, go ahead and let the contracts, the expense being paid by the village. In his opinion the General Village Law is the only satisfactory charter for a village and in it is defined the way to carry out all improvements. He thinks

that an ideal way would be to ask for bids for certain work, select the best bid, draw up a contract and have everything ready but the signing, and then submit the proposition to the people. This would obviate any chances of vagueness about the procedure. He believes that a proposition if put in this way would carry as it would in no other way.—[EDITOR.]

### **City Officials Should Not Act As Agents**

\_\_\_\_\_, Ala., April 3, 1903.

*Editor, MUNICIPAL JOURNAL AND ENGINEER:*

Kindly advise me where to look for information in regard to ordinances passed by the different cities of the United States regulating and prohibiting members of the City Council from dealing with the city or being directly or indirectly connected with contracts with the city.

**GEORGE B. WARD.**

Such a regulation is generally incorporated in the charter of the city, and in case such provision is not made the common sense of city officials is generally sufficient to keep them from acting as the agents, either directly or indirectly, of the corporations doing business with the city. In several instances where it has been discovered that city officials were acting as such agents a little publicity in the local press has been sufficient either to call for the resignation of such officials or prohibit the practice.—[EDITOR.]

### **The Right Kind of Asphalt**

\_\_\_\_\_, Ill., April 3, 1903.

*Editor, MUNICIPAL JOURNAL AND ENGINEER:*

"When in doubt ask the MUNICIPAL JOURNAL AND ENGINEER." On your advice I take the liberty of inquiring about Trinidad asphalt pavement. We have a few miles of vitrified brick pavement that have been down for from one to five years and the pavement is giving good satisfaction, except as to noise. There is a strong demand for a trial of asphalt on residence streets. We have no heavy teaming, except from coal handling of from two to four tons—very seldom the latter. We are a city of 15,000 population and growing and wish to inquire as to the practical wear of the asphalt and its comparative cost with the best vitrified brick and relative merits of the same. Any data you can give us or any articles to which you can refer us in the MUNICIPAL JOURNAL AND ENGINEER will be appreciated.

**S. J. SHARP, Chairman Street Committee.**

Asphalt pavements belong to the class of costly roadway construction, being ordinarily much more expensive than brick. They have been used for many years in the large cities of Europe and America and possess a number of advantages from a sanitary point of view.

Many varieties of asphalt have been used in their construction and most of these have very strong advocates as well as opponents. As the nature of the work requires special knowledge, plant, and skilled labor, the pavements are usually laid by companies, according to certain formulae and rules gained by practical experience. Most of these companies can lay a good pavement; but after once gaining a strong foothold in a city there is often a tendency to make the work cheaper, which usually results in an unsatisfactory pavement. For this reason the practice has arisen of requiring asphalt paving companies to guarantee the durability of their work for a period ranging from five to fifteen years, hoping thereby to secure the best results for the community—it should be said that few fifteen year guaranties are given now-a-days. This plan has, however, not always been successful in preventing early repairs, and in consequence it is impracticable to state which style of pavement is the best, as much depends upon local conditions.

Should you desire to acquaint yourself more intimately with the nature and composition of asphalt it would be advisable to consult with those who have given years of study to the subject, and among these we can recommend Mr. F. J. Warren, 93 Federal street, Boston, Mass., whose long experience in the business entitles his opinions to the highest consideration. It might be well to add that the subject of asphalt pavements has been full treated in the volumes of the MUNICIPAL JOURNAL AND ENGINEER for 1901 and 1902, and much attention is being given to the subject in the current year also.

I would strongly advise against the use of Trinidad asphalt for the

reason that during the past year, owing to a series of experiments conducted by Prof. A. W. Dow, of Washington, D. C.—who is the United States inspector of asphalt pavements—the city of Washington has prohibited the use of that brand of asphalt except as it is put through a washing process which eliminates the soluble salts with which it is strongly impregnated. Prof. Dow has discovered, in this fact, the cause of the almost invariable rotting of pavements which have been laid with Trinidad asphalt. It has been demonstrated, however, that when Trinidad Lake asphalt has been thoroughly treated that it becomes as good as any other for paving purposes, and by corresponding with the Maryland Paving Company you will learn something about the methods for treating this brand of asphalt. The Warren Asphalt Paving Company, whose advertisement appears in our JOURNAL and is not to be confused with the Warren Brothers Company, will be able to give you valuable information as to the best grades of pure asphalt to be used in the construction of asphalt pavements. We do not know that they are in the business of paving, but do know that they sell material for paving purposes and might put you in touch with those who handle their product, which is known to be good, as it has received the highest indorsement.—[EDITOR.]

#### Purification of Sewage

———, Ill., April 3, 1903.

*Editor, MUNICIPAL JOURNAL AND ENGINEER:*

Will you kindly supply me with the names and numbers of books or journals containing information relating to filters in actual operation for purifying sewage—crude sewage or sewage which has been treated? Likewise I wish to secure literature on practical construction and operation of septic tanks.

W. J. ATKINSON.

For valuable articles on the paving subjects we would refer you to the files of the MUNICIPAL JOURNAL AND ENGINEER for the years 1901, 1902 and the current year. To publish a list of articles upon these subjects which have appeared in other periodicals, foreign and American, during the past five or six years, would require several pages of space, therefore we give only the following list of books upon the subject:

"Sewer Analysis," by Alfred J. Wanklyn, \$2, (English); "Bacterial Purification of Sewage," by Sidney Barwise, 1899, \$2.50; "Sewerage and Sewage Purification," by M. N. Baker, \$1.00; "Sewage Disposal Works," W. Crimp, 1894, \$7.50; "Modern Methods for Sewage Disposal of Towns, Public Institutions and Isolated Houses," by G. E. Waring, \$2; "Sewage Disposal," Wynkoop Kiersted, \$1.25; "Sewage and Sewage Disposal," by H. Robinson, \$4.50; "Sewage Treatment, Purification and Utilization," by J. W. Slater, \$2.25; "Sewerage and Sewage Disposal of a Small Town," by E. B. Savage, \$2; "Sewage Disposal in American Sewage Purification," by E. Bailey-Denton, \$2; "Modern Treatment of Sewage," by H. C. H. Shenton, \$1.25; "Sewer Works Analysis," Gilbert J. Fowler, \$2; "Sewage and Bacterial Purification of Sewage," by Samuel Rideal, \$3.50; "Annual Report of the Rivers Department of Manchester, England, for 1900-1901," \$1.50; "Cleaning and Sewerage of Cities," by R. Baumeister, \$2; "Sewage Disposal in the United States," by N. M. Baker and George W. Rafter, \$6.00.

Any of the above works will be sent to any address postage prepaid upon receipt of price.—[EDITOR.]

#### Police Pension Funds

YONKERS, N. Y., March 2, 1903.

*Editor, MUNICIPAL JOURNAL AND ENGINEER:*

Have you any information relative to police pension fund matters? Certain police legislation makes it necessary that I should have all the information possible.

In our city the pension laws read that the Commissioners may retire their men and pay them at least one-half their salaries at the time of retirement.

The fund is increased by the addition of two per cent. of the men's salary, by ten per cent. of their excise money, by the interest of the fund, by fines, gifts, etc., the gross income amounting to nearly \$10,000 per year. But the same law reads, "No pension shall be paid to any member of the said police except from the income to be derived

from the said Police Pension Funds," which income at the present time amounts to but \$1,750, while the trustees have been paying out \$4,638, considering that they had a right to pay this out of the gross income.

Can you let me know whether, in other cities, they allow the use of the gross income, or, whether the city itself makes up the deficiency?

WILLIAM SHRIVE, *Alderman.*

Nearly all of the large cities have police funds but very few provide for half pay for their officers who are retired on account of age or disability. In the cities of New York, Jersey City, Hoboken, and Detroit it is the rule to use all the money that is collected for the pension funds. In New York, the surplus is large and has never become exhausted, and the amount to be invested from the funds of the pension account is placed at a certain figure. However, if the income from the investments should not be sufficient to meet the requirements, any money that is in the pension fund can be used. This is also true of Jersey City, where, at the present time, the fund is exhausted. All the bonds in which the previous surplus was invested have been sold and the city will probably make an appropriation for any deficit that may arise. It seems but proper that all money that is devoted to pensions should be available for use in that direction. If, at any time there should be a large number of retirements, such as would exhaust the fund, the city should make up the deficit. Jersey City turns over four per cent. of the salaries of the active men and the men in the department are also required to pay one per cent. of their salaries to the fund. Fines, permit money, etc., also goes into the fund. In Detroit, one per cent. of the salaries of active and retired officers is assessed for the fund. In New York, two per cent. of the salaries, \$3,00,000 from excise, gnes, sick time, penalties, receipts from steam boiler inspection, permits for revolvers and marked balls, percentage of rewards to the men, etc., goes into the fund. Of the gross amount \$386,000 is invested in city bonds.—[EDITOR.]

#### Cost of Garbage Cremation

———, Wash., April 3, 1903.

*Editor, MUNICIPAL JOURNAL AND ENGINEER:*

What should garbage collection and cremation cost the average householder in a city of 130,000 population per cubic yard? What are the rates in Minneapolis, Cleveland, Hamilton, and Grand Rapids?

T. S.

The cost of garbage collection and cremation varies so widely according to local conditions, that under the present regulations in American cities it is impossible to estimate what should be an equitable rate for any given city much less state the actual cost per cubic yard for handling refuse without accurate knowledge as to the local situation. The cost for collecting and disposing of garbage in cities west of the Mississippi is generally higher than in cities east of the Mississippi. From data which we have on hand the cost is found to vary from \$2 to \$3.50 per ton to collect and dispose of what is known as wet garbage—this does not include ashes. The total cost for collecting and disposing of refuse in Minneapolis for 1901 was \$30,000; for Cleveland, \$69,000; for Grand Rapids, \$12,500, according to the report of Carroll D. Wright issued last year.—[EDITOR.]

#### A Concrete Curbing for Paved Streets

———, Penn., April 14, 1903.

*Editor, MUNICIPAL JOURNAL AND ENGINEER:*

Please advise me in regard to cement or concrete curbing for paved streets. I have never seen any of it and we are talking of trying it here and would like to know what you think of it.

FRED M. HOOPER, *City Engineer.*

The cement or concrete curb is extensively used in many of the larger cities and is becoming quite popular. Where traffic is light and suitable natural stone is expensive, a well-made concrete curb can be used advantageously. Such curbs are also made in combination with gutters. For streets with heavy traffic, concrete curbs are sometimes provided with a steel armor on the upper corner for protection. For a simple, durable and inexpensive curbing I would refer you to the American Sewer Pipe Company, whose general offices are located at Pittsburgh, Pa. Ask for a descriptive catalogue of vitrified curbing.—[EDITOR.]

### Personalities

—R. E. White was elected mayor of Austin, Tex.  
 —G. A. Adams was elected mayor of Lincoln, Neb.  
 —Patrick Mullins was elected mayor of Butte, Mont.  
 —McKeesport, Pa., elected G. J. F. Falkenstein mayor.  
 —Mayor John P. Studley was re-elected mayor of New Haven, Conn.

—The election in Little Rock, Ark., resulted in a victory for W. E. Lenon.

—Judge Ira Harris and Ben Brown were elected mayors of Colorado Springs and Pueblo, Colo., respectively.

—Elections for mayor in Wisconsin principal cities resulted as follows: La Crosse, William Torrence; Oshkosh, John Mulva; Racine, Peter B. Nelson.

—Mayoralty elections in Kansas were: Kansas City, Thomas P. Gilbert (disputed); Leavenworth, D. R. Anthony, Jr.; Topeka, W. S. Burgenthal; Wichita, B. F. McLean.

—In Illinois the mayoralty contests resulted as follows: Chicago, Carter H. Harrison; Springfield, H. H. Devereaux; East St. Louis, Silas Cook; Quincy, John A. Steinbach.

—Michigan mayoralty elections resulted in part as follows: Bay City, F. T. Woodworth; Jackson, Samuel Pickles; Kalamazoo, Samuel Folz; Muskegon, Leonard Eyke.

—Mayor Mateo Fajardo, of Mayaguez, P. R., has been arrested on charges of fraud. Commissioner of Public Works Baez was also arrested in connection with these frauds.

—Mayor John Weaver, of Philadelphia, Pa., has announced the appointment of these heads of bureaus: Director of Public Safety, David J. Smyth; Director of Public Works, Peter E. Costello.

—The Councils of Carbondale, Pa., have elected Bryce R. Blair city engineer. He is to serve from April 1 to December 31 of each year at a salary of \$100 a month, and be at the call of the Council at any time.

—Mayor Howell, of Atlanta, Ga., has refused to sign a contract with a brick concern to furnish brick to the city because the company refused to insert a clause declaring that its goods were not made in whole or in part by convict labor.

—Elihu B. Hayes, former mayor of Lynn, Mass., died on April 2 from the results of a fracture of the skull received in a fall. He introduced the Australian ballot law when a member of the legislature. He also introduced the Free Public Library bill.

—The grand jury of Seattle, Wash., has indicted among many citizens, Mayor T. J. Humes, Chief of Police Sullivan, Police Judge George and Justice T. H. Cann. The first two are charged with malfeasance in office and the rest with failure to perform duty and perjury.

—In the principal cities of Ohio the following mayors were elected: Akron, W. C. Kemple; Canton, W. H. Smith; Cincinnati, Julius Fleischmann; Cleveland, Tom L. Johnson; Columbus, Robert H. Jeffrey; Dayton, Charles W. Snyder; Hamilton, Charles S. Bosch; Springfield, Charles F. Bowles; Toledo, Samuel M. Jones; Youngstown, W. T. Gibson.

—After having "ripped" out of office every employee of the city of Pittsburgh, Pa., except the Comptroller and City Clerk, Recorder William B. Hayes appointed the following heads of departments: Harry Moore, Director of the Department of Public Safety; James W. Clark, Director of the Department of Public Charities; E. M. Bigelow, Director of the Department of Public Works; W. B. Rogers, City Solicitor; E. J. Frankenheim, City Treasurer.

—The Council of Fort Worth, Tex., recently made the following appointments of officials, all but the street commissioner being re-appointments: Mayor pro-tem., J. F. Lehane; city secretary, John T. Montgomery; city auditor, Jesse J. Nunnally; city engineer, John B. Hawley; chief of fire department, James H. Maddox; city electrician, Charles Crabtree; superintendent of water works, A. W. Scoble; city attorney, E. C. Orrick; street commissioner, J. W. Renfro; city treasurer, W. B. Harrison.

### Society News

A REGULAR meeting of The Municipal Engineers of the City of New York was held on April 22, at the house of The American

Society of Mechanical Engineers, 12 West 31st street. Mr. Nelson P. Lewis read a paper on "The Building of Parks and Parkways in New York," illustrated with lantern slides. The membership of the organization has been raised to 404 since the last meeting, but it is hoped to acquire a greater membership by the summer. The election of permanent officers resulted as follows: President, Mr. Nelson P. Lewis, chief engineer of the Board of Estimate; first vice-president, Mr. O. F. Nichols, principal assistant engineer of bridges, Brooklyn; second vice-president, Mr. S. C. Thompson, principal assistant engineer, Bronx; secretary, Mr. Wisner Martin, principal assistant engineer of highways, Manhattan; treasurer, Mr. Arthur S. Tuttle, assistant engineer, Board of Estimate, Manhattan; directors for three years, Messrs. C. B. J. Snyder, education; John C. Wait, law; Edward A. Miller, parks; George W. Tillson, highways; Frederick Greiffenberg, topographical bureau. For two years, Messrs. George S. Rice, rapid transit; M. Raymond, docks; Henry R. Asserson, sewers; B. M. Wagner, water supply; Theodore S. Oxholm, public works; for one year, Messrs. Rudolph Hering, water supply commission; Robert Ridgeway, rapid transit; William S. Dalrymple, topographical bureau; Robert R. Crowell, topographical bureau, and Frederick Skene, highways.

### Convention Dates

#### MAY

The National Conference of Charities and Corrections will be held at Atlanta, Ga., on May 6th to 12th. Joseph P. Byers, Jeffersonville, Ind.

The National Electric Light Association will meet at Chicago in May. James B. Cahoon, New York City.

The National Veteran Firemen's League will convene at Boston, Mass., in May.

The International Chiefs of Police Association will hold its annual meeting at New Orleans, La., May 12th to 16th.

An exposition will be held at Dresden, Germany, May 20th to September 30th, for the study of improvements in municipal government in all its branches. Oberburgermeister, Geh. Finanzrath a. D. D. Beutler, Dresden, Saxony.

#### JUNE

The American Society of Civil Engineers will meet at Asheville, N. C., on June 8th to 12th. Charles Warren Hunt, 220 W. 57th street, New York City.

The Canadian Electrical Association will hold its annual convention at Toronto, Ontario, June 10th to 12th. C. H. Mortimer, Toronto, Ont.

The American Water Works Association will meet at Detroit, Mich., June 23d to 26th. J. M. Diven, secretary, Elmira, N. Y.

The annual convention of the American Society of Mechanical Engineers will be held at Saratoga Springs, N. Y., on June 23d to 28th. F. R. Hutton, secretary, 12 West 31st street, New York City.

#### JULY

The International Fire Prevention Congress will be held in London, England, from July 7th to 10th, in connection with the International Fire Exhibition.

The seventh annual meeting of the American Park and Outdoor Art Association will be held at Buffalo, N. Y., July 7th to 9th. Charles Mulford Robinson, secretary, 65 South Washington street, Rochester, N. Y.

New York City will celebrate the 250th anniversary of the founding of municipal government and the 100th anniversary of the building of the city hall on July 19th.

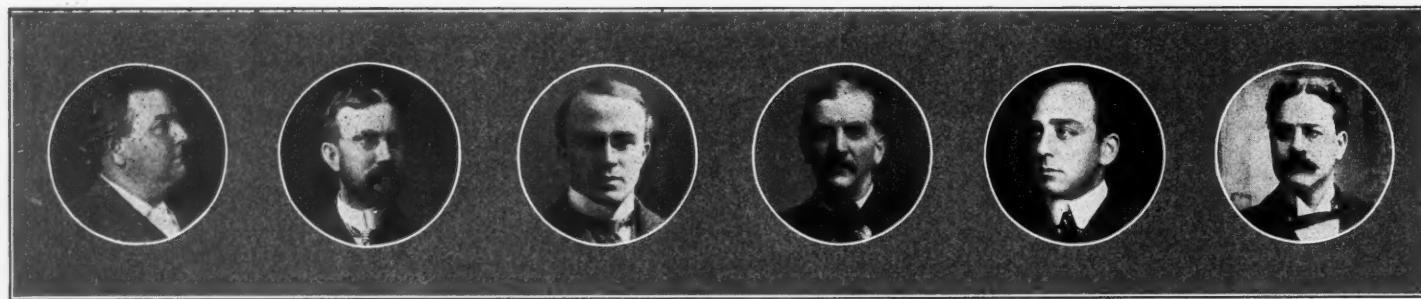
The annual convention of the American Institute of Electrical Engineers will be held at Niagara Falls, N. Y., June 29th to July 3rd. Ralph W. Pope, secretary, 95 Liberty street, New York.

#### SEPTEMBER

The International Association of Fire Engineers will hold its next annual convention at Atlantic City, N. J., September 8th to 10th. Henry A. Hills, secretary, Wyoming, O.

#### OCTOBER

The next meeting of the League of American Municipalities will be held at Baltimore, Md., October 7th to 9th. John McVickar, Des Moines, Iowa.



From left to right: Tom L. Johnson, Cleveland; W. H. Smith, Canton; Robert H. Jeffrey, Columbus; Samuel M. Jones, Toledo; Julius Fleischman, Cincinnati, all of Ohio; and Carter H. Harrison, Chicago

## RESULT OF RECENT MUNICIPAL ELECTIONS

AMONG the recent municipal elections the most notable victories were achieved in Chicago, Toledo, Cleveland, Columbus and Cincinnati. In his re-election to a fourth consecutive term, Carter H. Harrison had the fight of his life. The smallness of the majority demonstrates that Chicago is not so much attached to Mayor Harrison as it was two years ago. Its affection for him is slightly waning. He recognizes the significance of his dwindling popularity when he asserts that he will not be a candidate two years hence. The Chicago *Tribune* refers to the event as follows:

"It may be that some voters love Mayor Harrison because of what others consider his faults. His methods of administration, based upon political instead of business principles, may appeal to them. They may prefer an easy going, slipshod kind of management of city affairs, which looks after the "boys" rather than the public. If so, they will get what they want. Matters will be managed during the next two years much as they have been during the last six years. The people have approved of the Mayor's methods, and there is no reason why he should change them."

The re-election of Mayor Jones of Toledo is one of the most remarkable events in the political history of American municipalities. This is his fourth term and the third time that he has run as an independent. He was opposed by both the old parties, of course, and instead of being attacked by the local press was ignored. Two of the four papers would not print any reference to him even at advertising rates, while the other two would accept only a small amount of matter at advertising rates. While he proclaimed himself a man without a party and while there was no regular organization, there was sufficient cohesion among his followers to arrange for independent means of publicity through circulars, billboards, pamphlets and other printed matter, besides a series of outdoor meetings, and to conduct a very successful campaign. Despite the great odds against him, Mayor Jones polled about two-thirds of the total vote cast for mayor.

Commenting upon the result of the Toledo election the New York *Evening Post* has this to say:

"This repeated success of one who has some grotesque characteristics, yet who has evidently impressed himself on his fellow-citizens as an honest man, without the fear of a boss or a machine before his eyes, is more than a passing curiosity. It has a lesson for politicians, as well as for those ambitious to serve the public, if they would but read it."

The result of the election in Toledo has been most astounding in view of all the circumstances, but will be very gratifying to the Mayor's many friends throughout the country.

The re-election of Tom L. Johnson in Cleveland, was a foregone conclusion from the time he accepted the nomination. Mr. Johnson is a radical thinker and throughout his administration has endeavored most vigorously to carry out a well-defined policy, which has been more favorable to all the people than the partisan policy of any of his predecessors. Corporation and other tax dodgers have felt the vigor of his blows, and he has endeavored to reorganize the various municipal departments, placing them upon a business basis, and has endeavored to keep all financial transactions above reproach. He has not forgotten to do those things which contribute most largely to the masses, so that despite the strong opposition arrayed against him he won out with a handsome majority. It would be well for all Ameri-

can cities if they could have as their executive head as strong and vigorous a personality as Tom L. Johnson.

The re-election of Mayor Fleischmann, of Cincinnati, for a second term was a strong endorsement of his administration of the affairs of that city for the past three years. His policy had been vigorously assailed by the Democratic Fusionists, or the Citizens' Municipal Party, as it was called, but the fact that Mr. Fleischmann received the largest plurality ever given to any candidate for mayor in the history of the city is sufficient evidence that the people believed in him and in his way of doing things.

When asked by a representative of the *Municipal Journal and Engineer* what his future policy would be he replied:

"It shall continue to be my aim, as it has been throughout my present term of office, to keep Cincinnati's municipal government fully in step with the rapid strides made by this city in her commercial and material progress during the past three years. Many important public improvements already under way will now be pushed to their completion and many other improvements will be entered into. Because of the business methods applied to her municipal government by the present administration, Cincinnati is to-day enjoying the lowest rate of taxation of any of the large cities of the State of Ohio. The incoming administration will see to it that the citizens of Cincinnati shall continue to pay the lowest rate of taxes consistent with a liberal government, and with the ever increasing demands of a rapidly growing city."

For the past two years the administration of municipal affairs in the capital city of Ohio, Columbus, has been notoriously inefficient, and, therefore, it is not surprising that Robert H. Jeffrey was elected as the successor of Mayor Hinckle. The fault of the past administration has been due to the weakness of the chief executive rather than to inefficiency of those in subordinate offices. Whether the new mayor improves the situation or not remains to be seen. Mr. Jeffery was prevailed upon to enter the race for mayor upon the urgent solicitation of the business men of Columbus which fact augurs well for the future. In reply to a query as to what his policy would be, he said:

"It will be my aim to conduct the affairs of the city in a manner which will be satisfactory to those who desire a business administration. I will endeavor to give the citizens a full dollar's value for every dollar of the city's money expended. I favor the municipal ownership of public utilities, in such a manner as will preserve the best interests of the taxpayers, and give to the city the full control of the streets and highways, permitting it to receive value to the fullest extent for their use."

"We have undertaken a municipal light plant, which I will push to rapid completion, equipping it with the best known machinery, and see to it that it is conducted by methods generally accepted in modern engineering practice. The construction of storage reservoirs for water, and the purification of the water; the completion of the sewerage system and sewage disposal plants, the renovation and cleanliness of the streets, the most efficient effective and best drilled fire and police department that the city has ever known, the extermination of public gambling. These are some of the issues upon which I was able to win the election in this city, and which, with the help of the people generally, I propose carrying out."

## RECOMMENDATIONS OF MANY MAYORS

### Nashville Has Good Tax Law—Street Cleaning by City Prisoners—Chattanooga's Charter Works Well—Street Paving a Good Advertisement

#### MUNICIPAL TELEPHONE SYSTEM RECOMMENDED

Mayor Head reviews the operations of the various departments of Nashville, Tenn., including the establishment of the electric light plant which cost the city \$154,000, as told in the October, 1902, issue of THE MUNICIPAL JOURNAL. It has been the custom of the city to discount its taxes in October and with resultant loss of from one to two thousand dollars for interest on overdrafts. The time for maturing taxes has been changed and the amount to be paid divided into two payments, so that at no time will there be a large balance lying idle in the banks. The credit of the city has been greatly strengthened by a requirement of the charter that ten per cent. of all the taxes collected, except for schools, shall be set aside as a sinking fund for the retirement of the city's debt. The placing of wires underground must be attended to at once and the council is urged to consider the best way of accomplishing this work. The Mayor recommends that authority be asked from the Legislature for the building, operation of a conduit system and in connection therewith a municipal telephone plant, so that the city would be in a position to dictate to the local company and compel it to furnish satisfactory service at reasonable rates. Regarding the subject of parks the Mayor said: "No city can ever hope to become a city in fact, as well as in name, which does not provide suitable parks for the rest, recreation and amusement of its population. It is essential to the permanent growth of a city as the building of schools and manufactoryes." The finances of the city have been well administered under the Cohn tax ordinance and the system of bookkeeping in vogue is such that the recorder, treasurer, comptroller and tax assessor form checks on one another and prevent the possibility of mistakes or wrong doing.

#### STREET SIGNS AND UNDERGROUND WIRES DESIRED

The proper marking of the streets of Atlantic City, N. J., by suitable street-signs is urged by Mayor Stoy. Electric signs should also be placed at the intersection of each avenue and the board walk. All the electric wires should be placed underground because of the great danger and impediments resulting, especially at fires, from these overhead wires. Relief is recommended from the clamoring of bells and confusion at times of fires and the Mayor suggests that some means be taken to sound a general alarm and thus avoid the objectionable features of the present method.

#### SEWERS AND PAVING WANTED FOR BALTIMORE

THE message of Mayor Hayes of Baltimore is a review of the present administration during the three and one-half years of its operation, and strongly emphasizes the statement that the government has been honestly and economically conducted without any "rake-offs" or scandals. It is claimed that the public schools of the city have been removed from politics entirely. The Mayor is in favor of a sewerage system, and also desires that all streets be paved after a well defined plan. The money received from the Western Maryland Railroad tax should be spent in completing the sewer system, according to Mayor Hayes, and the proposed parking of Gwynn's Falls and Stony Run should be carried out to the fullest extent. The Mayor is in favor of the improvement of the water system, as recommended by Engineer Gray, and closes the message with the statement that "no modern municipal improvement should be wanting in Baltimore."

#### CONVICTS SHOULD CLEAN STREETS

The maintenance of the existing municipal departments in Wheeling, W. Va., should be provided for before any additions are made to these departments in excess of their present demand, according to the message of Mayor Sweeny. The Mayor admits that the streets have been distinctly unclean, but points out that the trouble has come from too small an appropriation for the street cleaning department, and asks that increased provision be made for it for the coming year. He considers the health department to be as important as, if not

the most important of, any in the city government, and recommends that the crematory be increased in capacity to take care of the great amount of garbage that cannot now be consumed. The Mayor formerly was of the opinion that it would be unwise to work the city prisoners on the streets in any capacity, but states that since he has come in touch with the actual conditions in the city his opinions have changed and he recommends that these prisoners be put to work in the outskirts of the city to keep clean the streets. In this way they would not come in competition with free labor, and what provision was made for spending money on street cleaning would first be used in hiring men to clean the central section of the city. The Board of Public Works should have control of these prisoners as regards their labor. This plan would also have the effect of keeping away the habitual tramp and other shiftless characters from Wheeling. The Mayor recommends that the city purchase a furnace for the consumption of the great quantity of waste paper.

#### NEW SYSTEM OF MUNICIPAL ACCOUNTING

The appropriations recommended for 1903 for Houston, Texas, are twice those of 1902. Some of the notable items of increase are allowances made for the fire and health departments and for water and light service, for which the budget for 1902 provided only about fifty per cent. of the actual cost of these utilities. The floating debt of the city has been reduced from \$127,181.77 to \$51,373.52. Considering the prospective demands upon the city's revenues, Mayor O. T. Holt recommends that the tax levy remain as at present at 2 per cent., as this amount will not produce a revenue in excess of what is absolutely necessary. If this policy be pursued this year it will be possible to reduce the rate of taxation next year by at least one-eighth of the present rate. The work of improving the streets will be carried on in the vigorous manner in which it was begun last year. The city has now 6.29 miles of asphalt, the other pavements being brick, gravel, macadam and shell, amounting in all to 26.22. The city has a total of 37.34 miles of sewers and it is proposed to increase this distance during 1903. The garbage of the city is handled by twelve carts and two wagons, the city being divided into twelve districts, each having a cart, the two wagons being held for extra service.

One of the first acts of the present administration was to have the records and accounts of the department audited by a firm of public accountants and this firm has installed a new system of municipal accounting for the city by which the officials may reduce to a minimum the possibility of shortages and irregularities in accounts in the future. Mayor Holt speaks proudly of the fact that his administration was the first in the history of the city to secure a substantial return for granting a franchise. The terms of this franchise with the railway company were given in the February, 1903, issue of the MUNICIPAL JOURNAL AND ENGINEER. A new charter has been formulated by the administration, the general purpose of which will be the clearly defining of the lines of demarcation between the legislative, executive and administrative departments and placing the administration upon a business basis.

#### SHOULD SPEND LARGELY FOR IMPROVEMENTS

The first annual message of Alexander W. Chambliss, of Chattanooga, Tenn., is a lengthy one and reviews not only the first year of his administration but also the first year under the amended charter. He explains many points concerning the operation of the charter and shows how it has divorced the executive from the legislative. There are three branches of the executive department, viz., the mayor, with whom is associated the Treasurer and Auditor; the Board of Public Safety and the Board of Public Works. The latter department has charge of all construction work in the city as well as the operation of the lights and the care of public buildings. These two departments the Board of Public Works and the Board of Public Safety expended during the last year \$44,840.75 and \$71,645.94 respectively,

the total budget of the city amounting to \$285,000. Regarding the sinking fund to eventually pay off the bonded debt, the Mayor says that the policy of the city is to pay into the fund at least \$5,000 a year. This will allow it to accumulate with sufficient rapidity for all practical purposes and will permit of refunding some of the present bonds which carry a high rate of interest.

Respecting the increase in the park system the Mayor says, "Our city can well afford to spend a reasonable sum of money in the laying out and fostering of a public park system which will, in years to come, prove a blessing to the community." The city has made arrangements with the railroads to transport from Chattanooga all characters who would otherwise be a charge upon the city and thus the community at the almshouse is kept within reasonable limits. The Board of Health of Chattanooga is composed of the Mayor, City Engineer, City Physician, an additional physician appointed by the Mayor, and the Chairman of the Committee on Health of the Aldermen. While the Mayor is, by virtue of his position, chairman of the board, he has considered it wiser to allow the City Physician to act as such officer. He recommends that an ordinance be passed as submitted by Dr. Wise, the City Physician, prohibiting the spitting upon the sidewalks and in the street cars and public buildings. The Mayor considers that the water supply, paved streets, and the sewer system have been the most potent factors in contributing toward the health of the community. In addition to the various agencies promoting the commercial and manufacturing interests of the city, the administration has furthered the general welfare by funding, on a 3½ per cent. basis, the floating debt, by contributing to the sinking fund, by placing the city's deposits upon interest bearing basis, by avoiding the discount of taxes, by abandoning the established practice of anticipating the collection of revenues, which takes from one year to pay the obligations of another. The excellent financial condition, in the opinion of the Mayor, justifies large expenditures for streets, sewers and public buildings.

#### BEST SEWER SYSTEM IN INDIANA

Mayor Henry C. Steeg of Terre Haute, Ind., speaks proudly of the fact that the tax rate in his city has been reduced from \$1.22 on the hundred to \$1.06 since he first became mayor in 1898. In addition the bonded debt of the city has been steadily decreasing and the floating indebtedness entirely wiped out. The Board of Public Works has been building what the Mayor claims is the best sewer system in any city in the State. The Mayor recommends that liberal appropriations be made to carry out this system to completion, and that such streets as have been sewerized be paved. The garbage crematory has taken care of all the garbage of the city in a satisfactory manner. The Mayor recommends that the city install its own water works and should pass an ordinance regulating the operation of automobiles in the city and an ordinance licensing the plumbers.

#### PAVED STREETS ADVERTISE A CITY

In entering upon his fourth term as mayor of Savannah, Ga., Hon. Herman Myers speaks proudly of the financial condition of the city. Of the expenditures for last year \$79,000 went for new street paving; \$2,000 for grading new streets and \$42,000 for opening streets, the total for six months being \$123,000. In the opinion of Mayor Myers, nothing has done more to assist in the building up of Savannah than the improvements of the streets. The favorable impression made upon visitors by well paved streets should not be underestimated in considering the factors that draw people as future residents, to the city. Not only are well paved streets a magnificent advertisement in themselves, "but well paved streets are conveniences to business, cheapen the handling of goods, and are a pleasure and a profit to their own people." The Mayor hopes that for the next two years a large part of the revenues of the city will be used for street opening and paving, deferring the reduction of the tax rate until the need of large expenditures for these two purposes, has ceased.

The Mayor recommends that a new city hall be built as soon as the necessary funds can be secured, and that a new cemetery be laid out. He speaks of the new plan of disposing of the city's garbage whereby it is carried on the trolley cars to the outskirts of the city and there sorted over and part put to profitable use. He thinks the time has arrived when the aldermen of the city should be paid for their services and recommends that ten dollars be paid each alderman for

attendance at each regular meeting of the board. He is not in favor of the employment of convict labor within a certain radius of the city limits and will endeavor to have the legislature pass a bill prohibiting such labor.

#### NEW CITY HALL NEEDED

Mayor Charles S. Baxter, of Medford, Mass., recommends that a loan be made by the city for the building of two avenues and the placing of sidewalks and curbing on several other streets. Money should be spent in setting out new trees and caring for the trees already planted. A boulevard along the Mystic River is desired by the city, and the Mayor urges that pressure be brought to bear upon the legislature to have an act passed allowing the construction of this driveway. The sum of \$10,000 at least should be appropriated, to complete the park at South Medford that was purchased last year.

#### SHOULD PROVIDE SINKING FUND FOR ALL BOND ISSUES

Most of the message of Mayor Egbert Seymour, of Bayonne, N. J., was devoted to the subject of taxes. The fairly high rate is ascribed by the Mayor to the failure of previous administrations to provide for any means of raising money to redeem the bonds issued for public improvements. Each tax levy should have contained an item to be devoted to the redemption of these bonds by the establishment of a sinking fund. Mayor Seymour has insisted, since his incumbency in office, on such sum being placed in the tax ordinance each year. The failure of citizens to pay their taxes and assessments has been largely accountable for the large tax rate and Mayor Seymour urges that means should be taken to sell the property on which arrears were owing. He urges that ordinances preventing the littering of the streets should be enforced as "there is nothing more calculated to create an unfavorable impression concerning municipal government, than the disorderly condition of the public streets." recommends the building of a new city hall.

#### BOARD OF WORKS SHOULD HUSTLE

The message that Mayor T. W. Hugo submitted to the Common Council of Duluth, Minn., was long but one of the best papers ever presented by the chief executive of that city. The question of good roads, in the opinion of the Mayor, is one of the most vital problems for the city. Strenuous efforts should be made to provide good roads to the outlying districts so that the farmers can readily transport their products to the city. Closely connected with the problem of good roads is that of street car transportation. Mayor Hugo holds that the use of the city streets should not be accepted by any corporation which cannot, or will not, render to the public in return for their franchise, all facilities that could be reasonably demanded. He commends the growing idea of civil service for city offices, especially for the departments of police and fire. The need for a fire-boat is still before the city and the Mayor recommends that the fire department should be supplemented in this most important particular. The Mayor thinks that the three members of the Board of Public Works should be so selected that it would not be necessary for more than one to remain in the office all the time. This would permit of the others dividing up the outside work and enable them to keep better informed on the progress of such work as falls under their jurisdiction.

#### URGES MUNICIPAL WATER WORKS

The special feature of Mayor Drennen's message was the financial condition of the city of Birmingham, Alabama. While the receipts were slightly less than those of the preceding year this did not imply a falling off of taxable values, but was accounted for by an Act of the General Assembly of Alabama which affixes a penalty of eight per cent. interest on all unpaid taxes after they had become delinquent. This resulted in an early payment of taxes which was credited to 1901. Much of the expense of the last year was devoted to increasing the efficiency of the fire department. The numerous losses necessitated large expenditures for new apparatus. Mayor Drennen recommends the extension of the sewer systems as being most important to the health of the city. He also recommends that provision be taken to keep the streets clean and well watered. In case the Birmingham Water Works Company does not agree to an equitable basis concerning the rates, the Mayor recommends that the Council push the project now being considered for a municipal water supply.

### Good Roads Movement in England

THE Local Government Board of England recently decided to appoint a committee to inquire into the general condition of the roads of England and Wales. The Roads Improvement Association, of which the Hon. Arthur Stanley, M. P., is vice-president, has been instrumental in securing the appointment of such a committee. This association has been endeavoring to have the roads of the Kingdom kept in better condition, and has been agitating for an increase in the number of good roads. While the main-line roads have been very fairly kept, the great increase in population off the old lines of travel necessitates more and better roads than exist at the present time. It is stated that there is no authority vested in any one to make roads, and that outside of the large centres of industry the roads are very bad and it is impossible for the population of these sections to reach the towns with any degree of rapidity. The Roads Improvement Association desires to have this new central authority created which will have the power of building new roads and improving the old ones. It is proposed to make the county councils and the borough councils the chief local authorities for the administration of the highways, and it is also proposed that a broad scheme of general improvement be planned, irrespective of the selfish desires of any one place. Greater co-operation between local authorities, through the medium of this new authority, would remedy the existing evils.

It is proposed that this new body administer a government grant in aid of loop roads suitable for rapid driving around small towns and villages and also new roads around steep hills. This new body would also prescribe the regulations respecting the width of roads and the methods of their construction, and determine the most economical methods of road maintenance and repair, and act as an advisory board to the local authorities. One of the main ideas in this new reform would be to make the government do for highways what it has done for education—that is, hold the local authorities responsible for the condition of all the highways within their respective confines.

### "Railroad Joker" in City Taxation

OWING to the efforts of the Real Estate Exchange, tax reform in Omaha, Neb., which began last year by assessing the franchises of the public service corporations at something near their actual value, has been carried still further this year by the assessment of the terminal properties of the steam railroads at their true value. This latest action of the tax commissioner, which has been approved by the Board of Review and the Board of Equalization, has resulted in the addition of \$25,702,158 to the assessment roll of the city.

At the time the city charter of Omaha was before the legislature, in 1897, it contained the usual provision for the assessment of all property for purposes of municipal taxation at its fair cash value, and before its passage the railroad lobby tacked on what has since been known as the "railroad joker," an addition "excepting the terminal properties of the railroads, the valuation of which the city tax commissioner shall take from the figures fixed by the State Board of Equalization as returned to the county clerk."

The State Board of Equalization, which has been under the control of the railroad corporations, has made a practice of assessing each railroad as a whole and prorating the assessment among the various counties through which the road ran according to the mileage in each county. Aside from making a very low assessment per mile, the state board exempted all side-tracks, yards, depots and other properties along the right of way under the pretext that the value of this property was included in the sum total of the mileage. Under this practice the city of Omaha has up to the present time only collected taxes on each mile of main track within the city limits, and has been leaving the great yards properties and valuable depots virtually free of taxation.

This year the city tax commissioner concluded to disregard the "railroad joker" in the city charter and assess the railroad property within the city limits on the same basis as all other property in the city is assessed, finding his justification for such action in the constitutional requirement "that every person or corporation shall pay a tax in proportion to the value of his or her or its property and fran-

chises and that taxes shall be uniform in respect to person and property within the jurisdiction of the body imposing the same." It is therefore the contention of the city tax commissioner that the "railroad joker" in the city charter is in conflict with the constitution of the State.

The following table shows the assessment of railroad property in the city of Omaha as fixed by the State Board of Equalization and by the City Board of Equalization for this year:

	State Board.	City Board.
Union Pacific .....	\$67,649	\$14,583,260
F., E. & M. V. ....	12,924	886,000
C. St. P., M. & O. ....	20,748	2,500,000
*O. & N. P. ....	11,310	_____
*O. & S. W. ....	17,615	7,863,140
 Totals.....	\$130,240	\$25,832,400
Increase, \$25,702,153.		

\*Owned by Chicago, Burlington & Quincy.

### Municipal Needs in Oakland

WITH the introduction of a new administration at Oakland, Cal., Mayor Warren Olney promises a non-partisan government. Inasmuch as many of the officials were elected on a ticket supported by several parties, Mayor Olney states, in his message to the Council, that no thought of party should enter into appointments for subordinate offices. Great interest has been taken in the government of Oakland by the cities of the coast and they will watch the "running of a city government for the benefit of all the people in it." He urges the Boards of Public Works and the Police and Fire Commissioners to weed out the incompetent and inefficient men under their control.

The most important question to be dealt with by the people of Oakland is the municipal ownership of the water supply. The Mayor considers that this has been settled beyond debate by the votes of the people. How best to acquire the works remains. The rapid growth of the city and of the municipalities of Alameda and Berkeley, which are in the vicinity, will soon force all three to unite, and the question of water supply is common to all. Therefore, in planning a water works, care must be taken to provide for the growing communities that will need a larger water supply than is now sufficient for these three municipalities. The inferiority of the water and the exorbitant prices charged for it by the Contra Costa Company have retarded the growth of the city. In installing a municipal supply, no thought should be given to acquiring the works of this company. Because of the fact that the plant is bonded for nearly its full value, a fair purchase price would yield nothing to the stockholders and they would not agree to allow what the city paid to go to the bondholders. Again, the plant and water supply is not what is wanted by the city because of the poor quality and limited quantity of the water. In the third place, the Contra Costa system could not be segregated so as to give Oakland a water supply as well as the rest of the towns unless all three united—something that could hardly be done. Therefore, Mayor Olney recommends that a good system of mains be laid throughout the city and a pipe line carried to Niles in the same county, where pumps, etc., should be installed to draw the water from the gravel beds of the district—water that is pure and in sufficient abundance to meet the needs of the city for years to come.

In the opinion of the Mayor it is only a question of time when San Francisco, Stockton, San Jose, Berkeley, Alameda and Oakland will unite in bringing an unlimited supply of water from the Sierra Nevada mountains. When that time comes, the pipe line to Niles could be extended to meet the great aqueduct and bring Oakland's share to the city. Thus the work done now will not have been useless.

The Mayor says that the condition of the streets is a disgrace to the city and the second greatest need of the city is good paving. Previous administrations permitted private persons to occupy a portion of the space devoted to sidewalks in the city. The result has been that certain property owners have made so-called improvements so as to increase the area of their land at public expense. The Council had no right to grant such permits and the right to the land occupied is null and void. These obstructions are a public nuisance and may be

removed by the city authorities. All permits of this kind should be revoked and no others of like character should ever be granted.

While the public schools of the city have a fine reputation, they are insufficient for the number of children in the city, and Mayor Olney recommends an issue of bonds to build new schools. Oakland, too, in the Mayor's opinion, is a long way behind cities of equal size in the matter of parks and boulevards. More lands should be purchased for parks and, with that already possessed, be improved. The administration begins with a deficit in finances amounting to \$31,634. There is not sufficient money raised every year by ordinary processes of taxation to cover the expenditures of the city.

The Mayor concludes his message with the hope that the officials will strive to realize all that the people are expecting of them. That they will make mistakes is self-evident, but he hopes that these will not be condemned with undue severity because of the hopes of the people. The expectations of the citizens are unreasonably high and will not be entirely met, as it would be asking the impossible. He will be satisfied, however, if, when leaving office, the people of Oakland shall say, "Well done, good and faithful servant."

### The Massachusetts Highway Commission

The work accomplished by the Massachusetts Highway Commission during 1902 is a further demonstration of the great value of that system of building roads. The Commission had \$500,000 to spend on roads during the year, for which fifty-seven miles of road were finished and sixteen miles laid out for work in 1903. There are now 415 miles of good roads built by the State. About 560 miles of roads have been built by the towns since 1894. The Commission has devoted much time to conferring with town authorities as to the methods, material and cost of road building. Care has been taken to render the specifications for road building very clear and correct that contractors may bid intelligently. The usual number of towns have taken contracts to build State roads, and this is of great value to the towns, as experience is gained thereby. During 1902, 281 towns and 25 cities have petitioned for roads.

The counties in which State roads are built have six years to pay the assessment of one-quarter of the amount expended during the year, but many have preferred to pay in one year. The Commission asked \$550,000 for 1903 and recommends that a like appropriation be made for each year, two years in advance. This would greatly facilitate engineering work and reduce the cost. The average yearly cost per mile for maintenance has been \$100.

Regarding the construction of roads, the Commission decides against the use of unscreened stone, as the smaller stones are ground up and the larger stones project above the surface. Native rock screenings have been used with success as a binder and from thirteen to twenty per cent. of the output of the crushers is saved. The standard width of the roads is fifteen feet and the depth of the edges has been reduced to two and one-half inches on good soil and to five inches on poor. No telford roads have been laid for two years, the Commission not considering them as good as macadam. The large stones work to the surface apparently from action of frost. Where a soft native stone has been used for surfacing, the large stones have worked to the top as the surface wore away. A saving of from twenty-five to forty per cent. has been effected over the use of I beams and masonry for culverts. This was accomplished by substituting re-enforced concrete, giving a more enduring and pleasing result. Structures of this kind having openings of sixteen feet or under are built as a part of the road. Having larger openings they are called bridges, and the State builds the abutments, the municipality the superstructure.

Each municipality must pay the State \$50 per mile for maintaining the State roads within its limits, and this amounts to about 28.75 per cent. of the total cost. In repairing roads, the Commission furnishes the material and pays an average of 58.91 to contractors for labor. The Commission controls seventeen road-rollers. These are rented to the towns, the latter making any repairs needed when under their charge. This is considered a bad method, as repairs are not always well made. The Commission should repair the rollers and charge the towns for their use an amount that will replace them when worn out. This would amount to about \$1.08 a day.

### Statistics of Arc Lighting in United States Cities and Towns

	Population, 1900.	No. Lamps.	Watts at lamp terminals.	Open.	Closed.	Open.	Closed.	Schedule.	Hours burn per year.	Cost coal per ton.	Contract price per lamp per year.
Boone .....	8,880	...	8	...	430	(2)	2,250	\$1.25	70.00		
Britt .....	1,540	...	12	...	...	(2)(3)	1,220	2.00	17.42		
Carroll .....	2,882	25	8	480	550	(2)(3)	1,220	2.00	74.00		
Cascade .....	1,260	2	2	...	...	(2)(3)	1,220	3.40	80.00		
Cedar Rapids .....	25,656	221	20	480	...	(2)	2,700	1.85	75.00		
Centreville .....	5,256	53	4	480	...	(1)(2)	2,940	.75	72.00		
Cherokee .....	3,805	16	...	340	...	(2)	1,500	2.75	72.00		
Clinton .....	22,608	200	...	480	...	(2)	2,800	1.25	65.00		
Council Bluffs .....	25,802	...	150	...	480	(2)	2,200	1.65	69.50		
Creston .....	7,752	26	...	480	...	(2)	2,161	1.53	65.00		
Davenport .....	35,254	427	...	480	...	(2)	2,250	1.65	65.00		
Decorah .....	3,246	14	...	480	...	(3)	1,825	3.06	72.00		
Denison .....	2,771	23	9	340	...	(2)(3)	1,220	2.50	60.00		
Des Moines .....	62,139	320	45	480	430	(1)(2)	2,179	1.15	65.00		
De Witt .....	3,383	...	9	...	...	(2)(3)	1,220	2.80	50.00		
Dubuque .....	36,297	371	...	480	...	(2)	2,500	2.15	64.75		
Dyersville .....	1,323	15	...	480	...	(2)(3)	1,220	2.90	60.00		
Eagle Grove .....	3,557	8	...	550	...	(2)	2,600	2.00	72.00		
Eldora .....	2,233	25	...	480	...	(1)	4,000	St'm	60.00		
Emmetsburg .....	2,361	...	20	...	550	(2)(4)	1,550	2.20	60.00		
Fairfield .....	4,689	21	...	480	...	(2)	2,250	2.50	z		
Fort Madison .....	9,278	90	...	340	...	(2)	2,179	1.50	67.50		
Grand Junction .....	1,113	...	10	...	550	(2)(3)	1,115	1.30	54.00		
Grinnell .....	3,860	30	...	480	...	(4)	2,555	1.35	75.00		
Hampton .....	2,727	30	...	340	...	(2)(3)	1,220	1.63	50.00		
Iowa City .....	7,987	110	...	480	...	(2)(1)	2,300	1.90	72.50		
Iowa Falls .....	2,840	14	...	340	...	(1)(2)	2,179	2.65	60.00		
Jefferson .....	2,601	20	...	480	...	(2)(3)	1,115	2.25	60.00		
Keokuk .....	14,641	175	12	480	430	(2)	2,250	1.75	60.00		
Lake City .....	2,703	...	10	...	...	(2)	2,179	2.00	100.00		
Lake Mills .....	1,293	...	5	...	550	(2)	2,179	2.10	60.00		
Lansing .....	1,438	...	4	...	...	...	1,000	3.50	72.00		
La Porte City .....	1,419	4	...	340	...	(2)(3)	1,220	2.75	45.00		
Le Mars .....	4,146	15	...	340	...	(2)(1)	2,220	2.18	75.00		
Logan .....	1,377	18	...	...	...	(3)	1,825	2.00	48.00		
McGregor .....	1,498	8	...	480	...	(2)	1,680	3.25	84.00		
Maquoketa .....	3,777	...	50	...	430	(2)	2,600	2.78	65.00		
Marshalltown .....	11,544	98	25	340	480	(2)	2,300	1.70	z		
Missouri Valley .....	4,010	15	...	480	...	(2)(3)	1,220	2.28	66.00		
Monticello .....	2,104	6	...	480	...	(3)	1,825	2.50	80.00		
Nevada .....	2,472	25	...	340	...	(2)(3)	1,040	1.12	56.25		
Osage .....	2,734	19	...	340	...	(2)(3)	1,220	W. P.	60.00		
Oscoda .....	2,505	20	2	480	430	(2)	2,179	1.50	75.00		
Ottumwa .....	18,197	...	137	...	430	(1)	4,000	1.15	123.80		
Red Oak .....	4,355	...	5	...	430	(2)(3)	1,220	1.74	84.00		
Rockford .....	1,080	...	14	...	550	(2)(3)	1,220	2.14	60.00		
Rockwell City .....	1,222	...	6	...	430	(2)(3)	1,220	2.10	60.00		
Sac City .....	2,079	...	3	...	430	(2)	2,179	2.25	60.00		
Sioux City .....	33,111	100	...	430	...	(2)	3,200	2.00	75.00		
Spirit Lake .....	1,219	8	...	480	...	(3)	1,825	2.25	z		
Storm Lake .....	2,169	...	3	...	550	(3)	1,825	2.00	72.00		
Tipton .....	2,513	35	4	480	550	(2)(3)	1,220	2.10	73.25		
Traer .....	1,458	...	2	...	...	(1)	4,380	2.00	120.00		
Vinton .....	3,499	8	2	340	...	(2)	2,500	2.96	z		
Washington .....	4,255	36	2	340	...	(2)(3)	1,600	...	68.00		
Waterloo .....	12,580	34	...	340	...	(1)	3,500	1.85	75.00		
Waukon .....	2,153	...	4	...	550	(3)	1,820	1.90	72.00		
West Liberty .....	1,690	23	...	480	...	(2)(3)	1,220	2.25	50.00		
What Cheer .....	2,746	...	6	...	430	(3)(4)	1,800	1.40	72.00		

### KANSAS

Abilene .....	3,507	...	12	...	430	(1)	4,000	W. P.	83.33		
Arkansas City .....	6,140	31	25	480	430	(1)	4,000	W. P.	72.00		
Atchison .....	15,722	150	...	480	...	(1)(2)(3)	1,220	1.50	60.00		
Burlington .....	2,418	10	...	340	...	(3)	2,160	2.00	72.00		
Clay Center .....	3,069	...	15	...	550	(2)(3)	1,350	W. P.	60.00		
Coffeyville .....	4,953	52	...	480	...	(2)	2,250	Gas	z		
Concordia .....	3,401	22	...	480	...	(3)	2,190	3.50	72.00		
Council Grove .....	2,265	10	...	340	...	(2)	2,179	...	z		
Eureka .....	2,091	6	5	480	550	(2)	2,179	2.75	75.00		
Fort Scott .....	10,322	...	75	...	480	(2)(4)	1,550	1.20	72.00		
Galena .....	10,155	30	...	480	...	(1)	4,000	2.05	90.00		
Girard .....	2,473	13	...	480	...	(1)	3,600	1.18	92.30		
Holton .....	3,082	26	...	340	...	(2)(3)	1,400	2.55	72.00		
Junction City .....	4,695	12	...	480	...	(1)	3,650	3.25	108.00		
Kansas City .....	51,418	...	184	...	480	(1)	4,106	1.30	100.00		
Lawrence .....	10,862	21	...	480	...	(3)	...	W. P.	156.00		
Manhattan .....	3,438	14	...	480	...	(2)(3)	1,220	3.75	87.50		
Marysville .....	2,006	15	...	480	...	(2)(3)	1,220	3.25	90.00		
Newton .....	6,208	17	...	480	...	(3)	2,190	2.40	94.00		
Olathe .....	3,451	32	...	340	...	(2)	2,179	2.00	60.00		
Ottawa .....	6,934	...	38	...	...	(2)	2,250	2.15	84.00		
Parsons .....	7,682	75	...	480	...	(1)	3,285	2.00	72.00		
Salina .....	6,074	35	2	480	...	(2)	1,800	3.10	99.00		
Sterling .....	2,002	10	10	...	550	...	1,825	2.60	75.96		
Topeka .....	33,608	338	...	480	...	(2)	2,179	2.00	z 40.00		
Weir City .....	2,977	16	...	480	...	(1)	4,000	.75	100.00		
Wichita .....	24,671	...	181	...	430	(4)	2,400	2.45	55.85		

(1) All night. (2) Moon scale. (3) Midnight. (4) After midnight up to 1 or 2 A. M. The difference in time may be judged from the column showing number of hours lamps burn. z Municipal plant. St'm Steam.

The data given in the above table were collected by the General Electric Company, Schenectady, N. Y.

(To be continued.)

## NEWS AND PRACTICE AMONG THE CITIES

### Plan to Keep New Orleans Clean—Opposed to Electric Conduits—Milwaukee Opens Asphalt Specifications—Municipal Electric Plant Pays

#### Sioux City Has Remarkably Pure Water

THE authorities of Sioux City, Ia., are highly elated over the results of the tests of the water supply made by Professor Smith, of Beloit College. Tests made of water taken from the various wells of the supply showed in many cases no growth of bacterial life after cultures were made. The results were so good that the Professor doubted their accuracy until it was found that all samples were the same, checking one another. He considers these results the most remarkable thing he has ever seen in a public water supply. The supply is practically limitless and the water works can be enlarged as proposed. The city is certainly to be congratulated on the purity of its water.

#### To Disinfect Street Cars

A METHOD of rendering the street cars clean has been adopted in Columbus, O., and strong hopes have been raised that the method in question will prove effective and thoroughly practical. The plan is one suggested by City Bacteriologist Fraker. The seats and wood-work of the cars will be sponged with corrosive sublimate and a current of air under ninety pounds pressure will be driven through the car, removing all the dust and loose dirt. The officials of the street car company have agreed to try the method, and, if successful, to adopt it at all the car barns. Nothing has been said as to the way mud is to be removed, but it is presumed that the hose will be turned on the car floors occasionally.

#### Will Regulate the Height of Buildings in Washington

THE new law regulating the height of buildings on residence streets in Washington will make many changes in plans for future improvements. Hereafter no building on such streets can be over eighty feet high. There are a number of apartment skyscrapers for which permits have been withheld to await the action of Congress, and in most of them it will be necessary to cut down the height of the proposed structures.

The new law allows buildings facing Government parks and triangles to be as high as the wider street at the intersection is wide. This authorization was secured to settle a controversy as to a big hotel which it was proposed to erect on the site of the Hotel Lawrence, adjoining the National Theatre and facing across E Street and a small park on Pennsylvania avenue. The builders can now put up a skyscraper 160 feet high, whereas the District authorities intended to limit them to ninety feet. Spires, domes, and towers are made an exception to the general rule.

#### Plan to Keep New Orleans Clean

A GENERAL plan of education will be undertaken by the Progressive Union of New Orleans to obtain a cleaner city. At a meeting held to devise means for making the city cleaner, the following recommendations were made by the executive committee of the Union: 1. That the Union provide about 500 metal boxes to be placed in the business sections for the reception of paper and other trash, the boxes to be bolted to the walks. The contents would be removed by the Department of Public Works through the bottom or side. 2. The extension of the park and street commission system, by means of which the streets could be made more beautiful. 3. Greater publicity to ordinances looking to the keeping clean of the streets. 4. That the Mayor proclaim a date after which all ordinances for the keeping clean of the city shall be rigidly enforced. There are many ordinances already passed which, if enforced, would cause the streets to be kept clean and free from rubbish and offensive matter. To protect the street paving, ordinances exist which prohibit the loading of carts or wagons above a certain weight, depending on the material carried. Thus 2,500 feet of lumber shall constitute a load for two horses or mules. Only 500 pounds of granite or marble, etc., shall be carried on a two-wheeled cart.

#### Ordinance to Aid Street Cleaning Department

THE street cleaning departments of many cities are annoyed and their work is greatly increased by the amount of dirt that is dropped from carts hauling earth to and from buildings. Superintendent Savage, of the street-cleaning department of Kansas City, Mo., has prepared an ordinance that he hopes will do away with this nuisance. Permits will have to be obtained from the superintendent of streets before any dirt can be hauled. Several drivers of dirt carts have been arrested for spilling dirt on the streets, but as yet no permanent good has been accomplished. The men complained that their employers overloaded the wagons and that they had to submit or be discharged. It is proposed to hold the contractors equally responsible with the drivers, and this can be done under the provisions of the ordinance requiring a contractor to take out a permit before hauling dirt. The permit can be taken away from him if he persists in violating the ordinance.

#### Meters Reduce Water Consumption

MUCH of the large consumption of water in Hartford, Conn., has been due to the damage caused the pipes by electrolysis. It was found by the Water Board that on some three and one-half miles of mains, an aggregate leakage of fourteen cubic feet per minute existed. In the last few years the consumption has been greatly reduced by the introduction of meters, of which there are 9,156 now in service. The daily consumption in 1902 was 6,981,000 gallons, while in 1889 it was 9,345,000. The report of the board deals in considerable length with the question of forestry. Professor Graves, of the Yale Forestry School, was engaged to examine the situation and he has prepared a map of the land under control of the Board. In the course of his report he said: "Systematic treatment will give, first of all, a settled policy regarding the treatment of the land, and by planting up the open fields the entire area will be brought under forest in the quickest way possible. By the establishment of a forest cover, the value of the land for catching, holding and distributing water is increased. By thinning judiciously, wood will be supplied for use on the city works, from material whose removal improves the forest. By adopting every possible precaution against fire this danger will be reduced to a minimum."

#### Opposition to Electric Conduits

MUNICIPAL conduits have received the indorsement of the city of Cambridge, Mass., for six different years. Bills have been introduced in the Legislature permitting the cities and towns of the State to construct and maintain a system of municipal conduits. The city electrician, Mr. Charles F. Hopewell, has, in conjunction with the city solicitor at Cambridge, been urging the passage of such a bill, but has received co-operation from but two other cities in the State. Therefore he recommends that agitation for legislation along this line be stopped until a stronger demand can be made by a majority of the cities. A good share of his report is devoted to an analysis of the financial accounts of the electric lighting and gas companies in the city. These tables show that oil and gas lamps have been gradually discontinued and have been replaced with incandescent mantle and incandescent electric lights. Tests made of the gas supplied by the Cambridge Company have shown an alarming increase in the presence of carbonic oxide and Mr. Hopewell urges that the Council take means to prevent a greater increase of this deadly gas.

The city electrician also desires that some action be taken toward a reduction of telephone rates and classification of the service. He asks that the Legislature be petitioned to appoint a telephone commission that would have the power of supervising the only telephone company in the State and exercising such control over this company as would bring about better service and lower rates.

**No More Free Paving**

THE paving of certain streets with stone or chert free of cost to the abutting property holders must be stopped in the opinion of some of the aldermen of Atlanta, Ga. An ordinance has been introduced into council, making it unlawful to pave any street with material of any kind without assessing the cost on the abutters. It is held by the supporters of the ordinance that free paving on some streets, while that on others is paid for by the property owners, is unfair and must be stopped. All resolutions for paving must be accompanied by a petition of at least one-half the owners on the street, requesting the same. It shall be a breach of official duty for any officer or employee of the city to pave any street without an assessment being made against the property benefited.

**Plans of Large Buildings to Be Filed**

PLANS of all large office buildings, flats, theatres and similar buildings are to be kept on file in the office of the building inspector of Milwaukee, Wis. Mayor Rose has recommended that this be done so that an accurate description of all buildings will be had in case of fire or disaster that would demolish the building. The file could be used as a source of reference by the chief of the fire department or any official who desired to know the interior construction of any building. Many instances have arisen where the availability of such a file would have been of great value. Plans will be secured of all the large buildings already constructed and in the future when any permits are given by the Building Inspector, blue prints or plans of the structures will have to be filled with him for record. It will be necessary to provide ample space to accommodate the files of plans which will grow constantly and a fire-proof vault or file should be erected for the files to protect them against the possibility of destruction by fire.

**Milwaukee Opens Asphalt Specifications**

THE Common Council of Milwaukee, Wis., has passed a resolution providing that all asphalt paving to be done in the future must be let under specifications that permit of any kind of asphalt being used, the kind, of course, to be specified in the bid. A bill has been before the Legislature providing that cities of the first and second classes shall have the power to withhold ten per cent. of the total contract price for asphalt work and to require a bond of twenty-five per cent. for the faithful carrying out of the contract. The resolution of the Council was conditioned upon the passage of this bill. If it failed of passage, the resolution called for a further period of five years in addition to the five years the contractors must keep the pavement in repair to the satisfaction of the board of public works and at the nominal cost of one cent per square yard. A subsequent resolution of the Council required that the board of public works draw new specifications for asphalt paving in accordance with the former resolution and submit the same to the Council for approval before bids were called for under them. The Mayor vetoed this resolution, but it was passed over his veto, only eight aldermen supporting the Mayor.

**Municipal Electric Plant on Paying Basis**

FROM all appearances the municipal electric light system of Freeport, L. I., has been a paying investment during the past year. When all the bills for lighting are in, it is estimated that a surplus of over \$1,000 will be on hand. Last spring \$800 was raised by taxes for an electric light extension fund and some \$564 has been used already for poles, wires, etc. Up to January 1, all items of expense had been paid and a \$1,000 bond liquidated. The receipts for the incandescent system during the year amounted to \$5,709.62 and the expenses, exclusive of interest, aggregated \$3,044.33. Interest on the bonds amounted to \$1,125, and to this must be added the \$1,000 bonds paid off. In the street light fund there was the sum of \$642.19, the balance from the \$3,000 appropriated last March at the annual election and \$200 voted for coal by the trustees. While there is some criticism of the running of the plant, the present officials show that the street lights have been run on a very small amount. Village

Treasurer G. A. Baldwin stated that if the taxpayers were taxed to pay the interest and principal of bonds on the plant, as the resolution voted for its construction provides, and not make the electric light consumers pay everything, there would be enough for repairs, new machinery and a sinking fund. The street lights have cost \$2,100 and the balance on hand ensures freedom from debt. The present rate per 1,000 watts is 12 cents and this has been furnished without loss to the village.

**Some Legal Decisions****Railway May Pave with Wood**

THE trouble which the street railway company of Hartford, Conn., has had with the city concerning the right to lay a strip of creo-resinato wood pavement between its tracks as an experiment has at last been settled by a recent decision of the Supreme Court of the State. The city denied the right of the State railroad commissioners to grant the railroad company permission to lay the sample stretch of pavement when the city authorities had refused their consent and appeals to the Superior and again to the Supreme Court were decided in favor of the right of the railroad commission to entertain the appeal of the railway and to make the order complained of by the city.

**Union Labor Ordinance Void**

THE union Labor ordinance of the City Council of Nashville, Tenn., which required that the label of the allied labor council to be placed on all the printing of the city, has been declared null and void by the Supreme Court of the State as being contrary to the charter provisions of the city, against public policy and tending to restrict competition in trade, and discriminating between the citizens of the city. Inasmuch as the contracts must be let to the lowest bidder, the ordinance was void as conflicting with this provision of the charter which was obligatory. The Court also held that it was class legislation and tended to create a monopoly and restrict trade.

**Speed Limit Out of Date**

THE Supreme Court of Indiana has decided that an ordinance of Indianapolis, the speed of street cars to 6 miles an hour, is no operative against electric cars. The suit grew out of an injury to a boy by one of the electric cars, and the plaintiff charged that the car was running faster than the ordinance allowed. In rendering the decision the Court said that within the last decade the use of electricity compelled the companies to answer the demand of the public for swifter transit. Therefore it would not be proper to enforce this old ordinance inasmuch as it acts contrary to the public good.

**Ordinance Unconstitutional**

JUSTICE WOODWARD, of the New York Supreme Court, has handed down a decision declaring an ordinance of the village of Port Jervis, N. Y., contrary to the State constitution and unjust. The ordinance in question provided that any one who is injured in the streets shall file a complaint or notice within forty-eight hours of the accident. The court holds that the ordinance is not only obnoxious to the constitution, but is hostile to the broad jurisprudence of the state which undertakes to provide an adequate legal remedy for every legal wrong. It is unfair in spirit, it makes the individual dependent on chance rather than on the uniform administration of the law and is intended to defeat the legitimate ends of government.

**Unsafe Sidewalks**

THE Supreme Court of Michigan has held that, where a plank has been removed from a sidewalk for a space of some feet, leaving a depression of about four or five inches, it cannot be said that the walk is reasonably safe. Where the injury to a person falling in the hole is permanent, the mortality tables are admissible. The walk had been out of repair for some time, but had been inspected within ten days of the accident and notice given the inspector. The court held that it was not error in a personal injury case for the plaintiff's counsel to comment on the failure of the city to examine physicians whom the city had sent to examine the plaintiff's injuries after she filed the claim for damages.

## FLOATING FIRE-FIGHTERS OF AMERICA

**Development of the American Fire-Boats—Their Great Utility Being Recognized—All Cities with Water Fronts Must Have Them—Enumeration of All Boats Now in Service**

By H. H. Easterbrook \*

FIFTY years ago the coming year—1859—the first fire-boat constructed exclusively for fire service, with pumps and machinery of special design, was built for London by Shand & Mason, of that city. This was not the first fire-boat designed. John Braithwait, an engineer of that city, who, with Captain John Ericsson, built the first steam fire-engine in 1829, made designs for a fire-boat in 1835, but none was ever built from his designs.

Long before this time hand pumps and hand fire-engines were used on boats and barges for fire duty. The earliest record of such a boat comes from Germany in 1683. It was illustrated with other earlier boats in the April issue of THE MUNICIPAL JOURNAL. This method was used in New York City as early as the great fire of 1835 and probably earlier. In recent years steam fire-engines built for land service had been used on barges for water-front fires in foreign cities. London now has, or did have in recent years, a number of such fire-floats, some with steam pumps, which were drawn to fires by harbor tugs or tugs kept near them with steam up for that purpose.

A number of foreign cities now possess modern fire-boats.

### FIRST USE OF BOATS IN FIRE-FIGHTING

The first use of boats or floats for fire service in America was the same as in London—hand engines on barges. Some years before fire-boats were constructed, harbor tugs were provided with pumps and equipments for fire duty by their owners and arrangements made with cities for their service at water-front fires. Several small cities now have similar arrangements.

New York as early as 1867 considered the procuring of a boat and about this time arranged with the owners of the tug *John Fuller*, which was provided with a fire pump, for its service when needed. Until the *William F. Havemeyer* was obtained in 1875, the *Fuller* was used at many of the largest fires along the water front. At the Boston conflagration, November 9-10, 1872, the tug *Louis Osborn* rendered service of great value.

Many New York tugs are provided with fire pumps and render service for salvage at harbor fires. There are so many of them that the law last year was changed placing the fire department in command of all harbor and vessel fires. This has greatly improved that

service and saves many dollars of salvage money which, under the old system, tug owners were entitled to if they rendered any service whatever.

### BOSTON HAS FIRST AMERICAN FIRE-BOAT

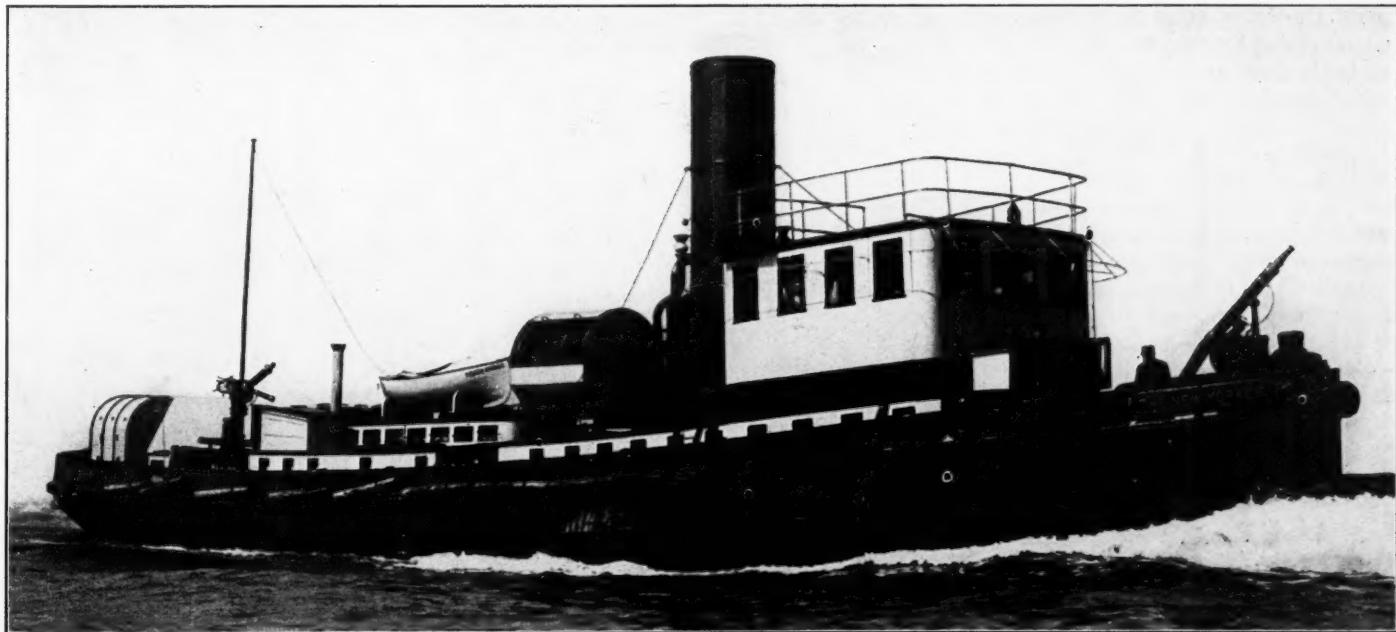
Boston was the first city on this continent to possess a fire-boat, the *William M. Flanders*, which went into service January 1, 1873.



FIRE-BOAT "JAMES R. ELLIOTT," DETROIT

It was named in honor of a member of the city council. Chief John S. Damrell for several years had urged a fire-boat similar to those in London. In 1872, before the big fire, its purchase was ordered. It was built at the Atlantic Works, East Boston, and was about fifty-five tons measurement, seventy-five feet in length, fifteen feet beam, and seven feet in depth. Its hull was built of iron; the keel, stem and stern posts of hammered metal, and frames of reverse angle iron. It had three keelsons running its entire length. The forecastle was provided with berths and other accommodations for men. On deck were officers' cabins, engine, boiler, cook and hose rooms, and pilot house over hose room. Its engine was vertical, direct acting, high pressure, link motion, with seventeen-inch cylinders and upright tubular boiler. Its pumps were constructed by the Amoskeag Mfg. Co., of Manchester, N. H., builders of Amoskeag steam fire-engines, and of same design as fire-engine pumps, equal in capacity to four first-class steam fire-engines. It has eight two

\* Editor, "Fireman's Herald," New York



"THE NEW YORKER," SECOND LARGEST FIRE-BOAT

and one-half inch outlets. It was also constructed for and used to break ice in the harbor. It was retired from service July 3, 1889, and sold. Its present whereabouts is not definitely known.

New York was the second city to possess a fire-boat, the *William F. Havemeyer* (Engine No. 43) which went into service May 12, 1875, and was named in honor of a former mayor. It was built of wood by Wood, Dialogue & Co., Camden, N. J., was 106 feet long, twenty-

teen outlets, and three monitor nozzles, one five inches in size. There will be two outlets for six-inch hose.

In Philadelphia is to be found the largest fire-boat, the *Samuel H. Ashbridge*, which went into service January 1, 1901. The dimensions of this boat are as follows: Length, 145 feet; beam, twenty-four feet; depth, ten feet; draft, eight feet. Propelled by a fore and aft compound engine, with cylinders twenty and forty inches in diameter by twenty-eight inches stroke; also fitted with one American Fire Engine Company's vertical duplex pump, with 700 horse-power propelling engines. There are one three-inch monitor aft and one three-inch monitor forward, with one two and one-half-inch four-outlet manifold amidship. The other boats of the "Quaker City" are the *William Stokley*, put in service November 1, 1884; the *Samuel G. King*, July 20, 1886; and the *Edwin S. Stuart*, August 2, 1892.

The first fire-boat in use in Chicago was called the *Geyser* but it was afterwards renamed the *Denis J. Swenie*. It went into commission on November 29, 1886. The names of the other boats are: The *Chicago*, January 1, 1887; *Yosemite*, December 19, 1890; the *Fire-Queen*, put in service during 1892; and the *Illinois*, January 14, 1899. The bow of the last is cut away so as to run up on the ice and act as an ice-breaker in winter.

The city of Milwaukee, Wis., has three fire-boats already in service, and these are the *Cataract*, October 15, 1889; the *James Foley*, December 1, 1893; and the *August Janssen*, but is now having built in Chicago what is to be one of the finest of floating fire-fighters.

FIRST AMERICAN FIRE-BOAT, "WM. M. FLANDERS," BOSTON, 1873

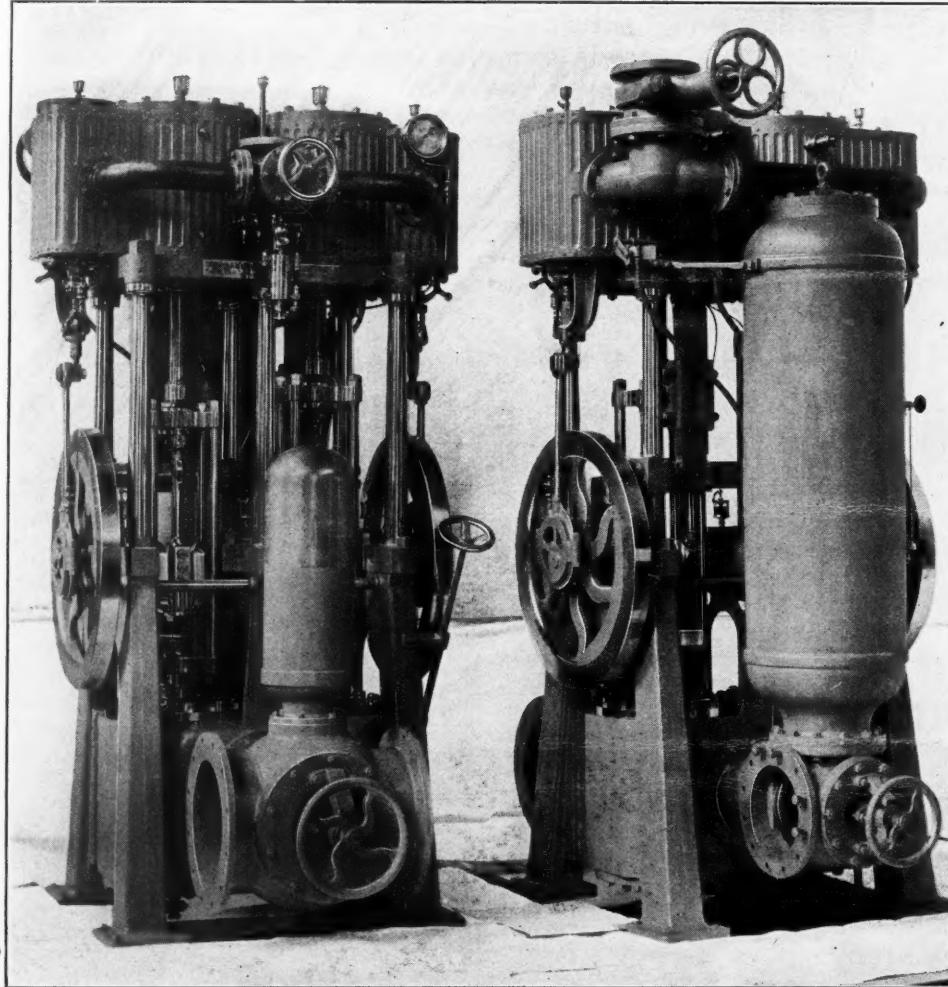
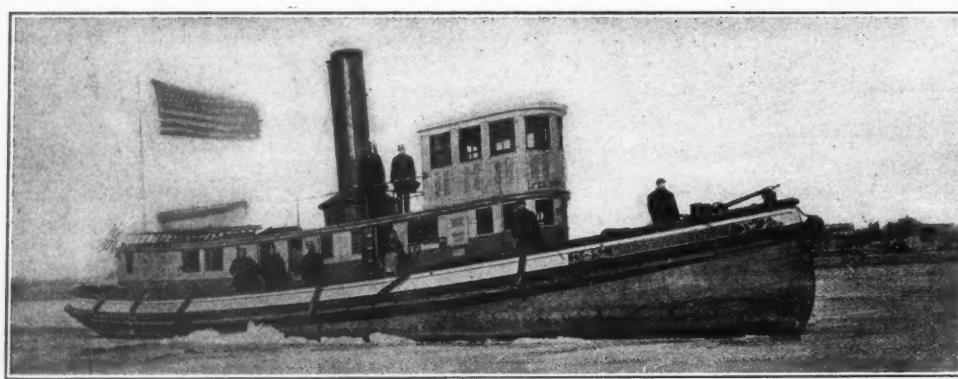
two feet beam and drew ten feet of water. It had a Cowles boiler with a single cylinder jet condensing engine, two pumps with 2,000 gallons per minute capacity for both, and eight outlets. It was stationed at the Battery. It was retired and sold October 2, 1901, and is now used as a towboat.

It is not the purpose of this article to describe in detail all the fire-boats that are or have been in service in the country, but it will suffice to mention the names of these boats, the date of their installation and the names of the cities in which they are located.

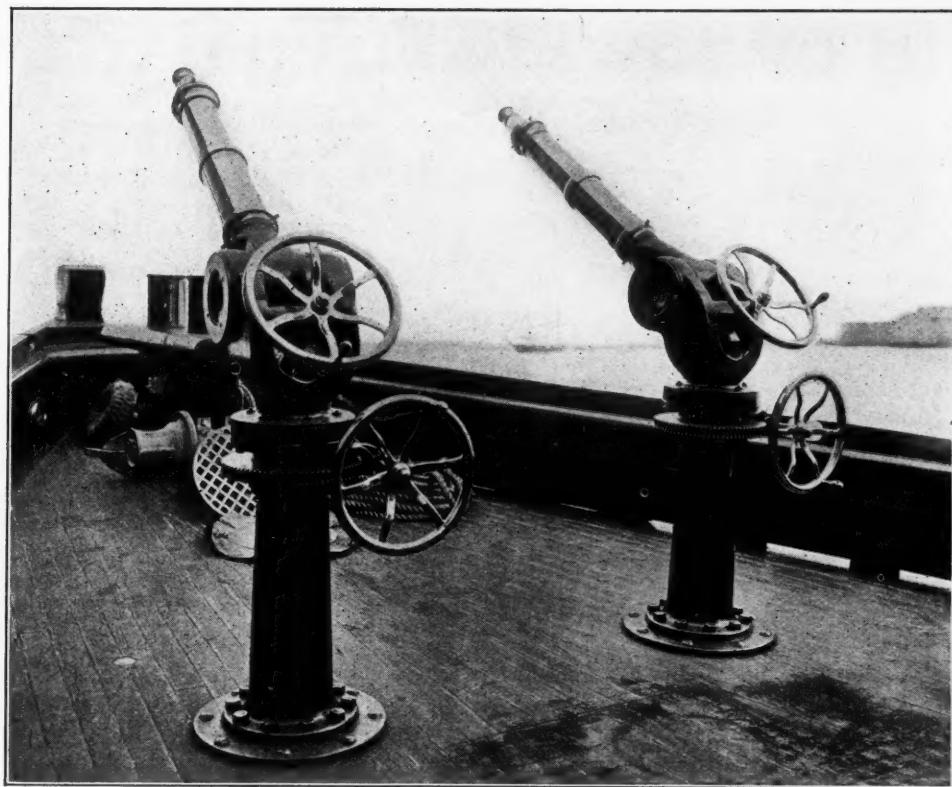
#### FIRE-BOATS OF NEW YORK

At present New York has in service five fire-boats, the *Zophar Mills*, put in commission on April 14, 1883; the *Seth Low*, January 1, 1886; the *New Yorker*, February 1, 1891; the *David A. Boody*, December 17, 1892; and the *William L. Strong*, June 1, 1898. The last was formerly known as the *Robert A. Van Wyck*. The *Low* and *Boody* were in the Brooklyn department before its consolidation with New York. Up to January 1, 1901, the *New Yorker* was the largest and most powerful fire-boat afloat. It has a steel hull, is 125 feet long, twenty-six feet broad and has a draft of twelve feet. It is of 800 horse-power, has a triple expansion engine, fifteen-inch high pressure cylinders, twenty-four-inch intermediate and thirty-nine-inch low; twenty-four-inch stroke; two Scotch pattern boilers, 148 pounds steam pressure; single screw. Pumps were constructed by the La France Fire Engine Co., and Clapp & Jones Mfg. Co. The capacity is 13,000 gallons per minute and the cost, \$98,000.

New York has awarded a contract for one new steel fire-boat, and will soon contract for another one. The one contracted for will replace the old *Havemeyer*. It was designed by H. De B. Parsons and is built by the New York Ship Building Co., of Camden, N. J. Its pumps will be constructed by the American Fire Engine Co., of 7,200 gallons capacity. It will cost \$81,000. It will be 117 feet long, twenty-four feet three inches beam, nine feet six inches draft, single screw propeller; fifteen



PUMPS, BUILT BY THE AMERICAN FIRE ENGINE CO., FOR THE RECONSTRUCTED "ZOPHAR MILLS"



FIRE-BOAT MONITOR OR SWIVEL NOZZLES

## RULES FOR FACTORY FIRE-BRIGADE

THE rules and regulations for a private fire brigade are interesting as showing the organization that can exist in a factory or manufacturing concern of any kind. The fire brigade of the Eureka Hose Company has been well organized to afford protection to the factory in case of the outbreak of fire and will be able to prevent the spread of any small fire that might originate within the buildings and thus save calling out the regular firemen of Jersey City and the company great property loss. As strict regulations have been formulated for the control of this private brigade as are in force in regular city departments and a digest of them will be interesting.

The vice-president and superintendent will have charge of the brigade when the fire-marshall is not present. The last is the commander and all firemen must obey his instructions in everything relating to fire matters. He will drill the brigade and report weekly to the vice-president concerning its condition and that of the apparatus. The factory engineer will be the engineer of the brigade also and will take charge of the pumps, boiler and engine department in event of a fire. He will be assisted by an assistant engineer and four men. This force will report to the engine room at any alarm and remain on duty there.

The men in the factory are to be divided into six battalions. As far as possible the men in each department forming a battalion and being in charge of the foreman who will act as battalion chief. The latter will have charge and be responsible for the fire appliances pertaining to his battalion and in the absence of the fire-marshall and superintendent, the command will devolve on the battalion chiefs in serial order.

The men in the finishing and shipping department will form the first battalion and will have a hose company, a hook and ladder company and a salvage corps. The second battalion will be composed of men in the machine department who will form a hose company. Battalion third will be in the weaving department. The safety of the female employees in this department will be the first duty of the men. They will also carry out clothing in case of fire, will assist in salvage work and will aid the other firemen. The fourth battalion will be made up of the employees in the coupling department. The duties will be to see that all fire doors and shutters are closed, that all windows

in which sparks might fly are shut and prevent the spread of fire throughout the building. The duties of the fifth battalion, composed of the twisting department men, will be similar to those of the third battalion. The sixth battalion will form a hose company and will be formed in the foundry.

Each hose company will consist of a foreman, assistant foreman, two hydrant men, and five other men. The hook and ladder company will be the carpenter and assistant. They will take charge of the tools, ladders and appliances and have them ready for the firemen. Five men will compose the salvage corps and they must afford the best possible protection to any machinery or goods liable to damage by fire, during a sprinkler leakage or storm. Entrance guards will be stationed at the gates in case of fire and will keep out all unauthorized persons and direct the city firemen to the location of the fire. When the factory is closed, the watchman will ring both private and public alarm boxes and will then repair to engine room and blow the factory whistle. The sprinkler pressure must be kept up at all times by the engineer even if the hose pressure be cut off. Double pay will be given all men responding to an alarm of fire as long as they are on fire duty. The officers of companies will attend to shutting off valves, gas and electric current from sections where necessary.

The factory is equipped with an auxiliary alarm box on each floor and this connects with the box in the street. Private alarm boxes are also placed on each floor. The box on the floor on which the fire exists should be the only one pulled. A single stroke on the alarm bells signifies the circuit is out of order and this must be reported to the superintendent at once and the alarm fixed again. One stroke repeated two or more times is full alarm for engine room floor. Two strokes repeated mean the main floor, three strokes the twisting department, four strokes the warp room floor, five strokes upper floor and roof. The vibrating gongs will be used for noon signal and sprinkler leakage alarm. Every second night the watchmen must ring in a private alarm to test the bells, a different box being pulled each night. The waving of a red signal by the vice-president, superintendent or marshal will be used for drill purposes and the one seeing this must pull the hook on his floor and must stay by it to direct to supposed fire.

It will be of steel, 118 feet long, twenty-six feet beam and ten and one-half feet draft, and is to cost \$100,000.

In Boston there are two fire-boats and are designated as Engines Nos. 31 and 44. The former went into service on July 1, 1888, and the latter on August 22, 1895.

Detroit, Mich., has two fire-boats also. The first of these was called the *Detroiter* when it went into commission in July, 1898, but has been renamed the *James R. Elliott*. It is equipped with an electrical outfit and a searchlight. The *James Battle* is the second boat and entered the service in January, 1901.

Buffalo, N. Y., has three boats for fire-fighting, the *George R. Potter*, December 2, 1887; the *John M. Hutchinson*, July 1, 1898; and the *W. S. Grattan*, November 15, 1900.

The city of Cleveland, O., has two boats, one called the *Cleveland*, which has served since November 1, 1886, and the *J. S. Farley*, serving since January 2, 1894.

The cities of Baltimore, Md., Portland, Me., and Seattle, Wash., have each one fire-boat. The first is named the *Cataract*, put in service on August 15, 1901; the second is known as Engine No. 7, and has been in use since 1895; and the third is called the *Snoqualmie*, and was built in 1891.

## FIRE EQUIPMENT OF TOWNS AND VILLAGES

By **Walter E. Price** \*

We shall assume the towns and villages of whose equipment we are required to treat cannot afford the expense of an alarm or water-works system. Nevertheless, water must be had if we would extinguish fires. It is true there are chemical powders of various denominations placed on the market, the manufacturers claiming quick results from the use of their particular compounds, and no doubt may be very effective if brought into play before the fire has gained much headway. But as the villages are destitute of fire alarm systems, the average fire is beyond the control of the chemical powder when the firemen arrive at the scene of their labors. The inventive genius of the twentieth century may evolve a machine built somewhat on the plan of a modern rapid fire gun, with a capacity and power sufficient to pour in a broadside of shells containing chemical powder, that would reach the seat of the blaze and extinguish the fire in a few moments. As it is, we must rely on the machinery at hand. The old fashioned bucket brigade and hand engine, though considered back numbers by many, are yet capable of accomplishing much good if efficiently manned and directed.

### WATER SUPPLY FIRST REQUISITE

It must be conceded a water supply of some kind is necessary in an equipment for the extinguishing of fires. Many villages put down deep wells and pump the water by windmill, steam or gasoline engine or pump, into a tank erected fifty or more feet above ground. The tank is then connected by one and one-half or two-inch pipes to small hydrants with outlets of same size. A small hand reel with 150 or 200 feet of one and one-half or two-inch hose completes the outfit. The first strong blaze proves the inefficiency of the plant, and the city fathers realize their good money has been spent in vain.

A system of cisterns is more reliable. Cisterns of 300 to 500 barrel capacity can be built adjacent to the largest buildings and easily kept filled by pipes leading from and connected with rain-water conductors on the buildings, the cisterns being provided with overflow traps below the frost line.

### SELECTION OF APPARATUS

Provided with a water supply, the fire department will choose its equipment, buckets, manual engine, steam-engine, gasoline engine or chemical engine. Perhaps in this case we should not mention the steamer on account of its expense and the necessity of keeping hot water in the boiler if we would have quick results. However, in some small towns, all these difficulties have been overcome by the ingenuity of the firemen. If the bucket brigade is decided on, the equipment will consist of a village hook and ladder truck with a full complement of buckets, with extras in case of emergency. A hook

\* Secretary of Illinois State Association, who read this paper at the convention held at Aurora, Ill., January 13, 1903.

and ladder truck fitted with modern tools and ladders of size sufficient to reach the roof of the highest buildings should be the first purchase of any fire department, large or small. The manual engine will next be considered. As to expense, a new one will cost nearly as much as a gasoline engine or chemical, but second-hand machines may be bought very cheap. The hose necessary will cost as much as that for the gasoline engine if 2½-inch size is used. With the manual engine work can commence when you arrive at the cistern or well, but you must have a full complement of men or the motive power will soon be exhausted. With the gasoline engine, the motive power is practically inexhaustible. The number of men required to man the hand-engine would be sufficient to fill two or three hose companies. Where a town has more men than money it will no doubt give its preference to the hand-engine.

The merits of the gasoline engine compared to the steamer are its power to throw larger streams in proportion to its weight and the short time consumed in starting the pumps in motion. It is capable of pumping water through the hose as soon as the signal of "ready" is given, and will throw one or two steady streams until the cistern is emptied. As with the manual engine, it will be necessary to be supplied with a hose reel and 500 feet of 2½-inch hose.

### MERITS OF CHEMICAL ENGINES

The chemical engine is a most useful piece of apparatus, and it is truly said 75 per cent. of the fires in the large cities are extinguished by it. The reason for its prowess is the rapidity with which it gets in its work. But the situation is altogether different in a small town minus a fire alarm. It is granted the advantage is on the side of the chemical in its ability to go to work immediately on its arrival at the fire, but if it does not win out on the first round, the time taken in replenishing its tank will be fatal. And right here is where the superiority of the old hand-engine, steamer, or gasoline engine is shown. The steady grind of hard labor required in conquering a stubborn fire does not rightfully belong to the chemical. The chemical occupies a position similar to the cavalry arm of the military service, it is its eyes and ears, it can strike quick and hard, but when it meets the enemy in force, it has to make way for the artillery and infantry, who are prepared to give the hard blows necessary to obtain the victory.

We have tried to mention apparatus necessary for the equipment of a fire department in the smallest of villages, but in making a choice we insist the hook and ladder truck should be the first piece considered then add the others as your means will permit. Do not make the mistake so many have done, by buying a piece of apparatus at exorbitant figures only to rust and rot in the engine house because your men have not had the training or the opportunity to obtain the knowledge necessary for its care and management.

### Scheme to Obtain More Men

THE City Council of Kansas City, Mo., has been considering a communication from Chief Trickett, recommending that the watch boys at the different engine houses be dispensed with and that their places be taken by men who could do service as firemen. This would allow one man additional to each hose and truck company.

Chief Trickett said that at present he had five men to each hose company and eight men to each truck. When the average number of men are off duty on leave of absence or on account of sickness, and men are detailed to take care of the horses at a fire, it frequently happens that there are only two men to handle a single line of hose. The Chief says that he needs three men to each hose reel and ten men to the trucks. Where there are hostlers at the engine houses these look after the stations in the absence of the firemen. Kansas City employs nineteen watch boys, who draw altogether \$665 a month.

### To Summon Police by 'Phone

A PLAN whereby any citizen may summon a policeman by telephone from instruments placed at the street corners has been devised by the Home Telephone Company of Cohoes, N. Y. Incidentally it will mean that a goodly increase in the income of the company will be afforded. The proposition of the company is to have the city sign a contract for the placing of telephones in booths at different points throughout the city, the city to pay therefor \$32 a year for each instrument. When the services of a policeman are needed all the citizen has to do is to enter the booth and ring up the central office. The operator then turns the current on a light provided with a red globe and placed on a tall pole. The watchful policeman, seeing the signal of distress, calls up the central and is directed to the seat of trouble. The telephone can be used for other purposes than calling a policeman by dropping a nickel in the slot, the city taking all moneys so received.

**An Efficient Aerial Ladder**

ONE of the most interesting exhibits given at the Chief's Convention, held last September in New York City, was the tests on the aerial ladder made in the street at the side of the exhibition hall. A boy of ten raised this ladder to a height of seventy feet in ten seconds and, in fact, it went up so easily that a few vigorous turns of the wheel were all that was necessary to send it up. At the most two men are all that are required to handle the ladder in all maneuvers that were made there and would be necessary at a fire. The ladder was remarkably firm as was shown by the fact that Chief Roberts of Denver, Colo., ran nimbly up the ladder when it was extended vertically and unsupported by a building as shown in the accompanying illustration.

The base of ladder is attached to turn-table with steel forgings, light as possible consistent with necessary strength. The springs balancing the weight of the ladder are enclosed in steel tubes and operate by expansion. Should each spring break in pieces, the



SHOWING TEST OF AERIAL LADDER AT FIRE CHIEFS' CONVENTION

strength is not effected sufficiently to be noticed in hoisting the ladder, and as they cannot get out of these tubes, the operation of the ladder is not affected.

The governing screw is attached to the frame by an adjustable ball and roller bearing journal box hung on vertical axis and works in bronze nut hung on both horizontal and vertical axis, which avoids all possibility of binding. The screw is operated by bevel gear and winch handles.

The turn-table wil make a complete circle and permit the ladder to be leaned to a building in any possible direction without removing the horses, and the ladder may be placed in the middle of a forty-foot street and leaned to buildings on either side without danger of overturning.

One great advantage is attained by the use of this kind of aerial ladder as is claimed by its makers, the Seagrave Company of Columbus, O., and that is the fact that when the ladder has finally been raised into position, the men are not tired out and are ready for any work required of them. This is a point of great importance, when considering the small number of men in a truck's crew. Of course the rapidity with which the ladder can be raised saves many a precious moment at the beginning of a fire. A few moments saved at this time may save many a life and much property of great value.

**New Rules to Guide Police**

THE police of Rochester, N. Y., are now working under a new set of rules for their guidance. The Commissioner of Public Safety, Mr. George A. Gilman, has drawn up the rules in accordance with provisions of the charter. The instructions to the force are partially embodied in these paragraphs:

The following rules are intended to define merely the main responsibilities of the members of the police department. Rules cannot cover every case that may arise. It is neither desirable nor possible to make them do so. Something necessarily must be left to individual discretion and intelligence.

The proper duties of police officers are not generally understood. A policeman is the servant of the people and the executive agent of his city government. His duties are threefold:

The first duty of a policeman is to concern himself in affairs involving the safety or comfort of the public. He should endeavor to make himself as useful as possible to the portion of the community in his immediate charge. Dangerous and offensive conditions in streets, cases of suffering and destitution, lost children and similar matters deserve first attention.

The second duty of a policeman is to check crime so far as lies in his power. To prevent crime is more to the credit of an officer than to make an arrest.

Third. When no effort of a police officer can prevent crime, it is his duty to arrest the criminal and bring him to justice.

The public has a right to expect and demand the exercise of good judgment and ordinary common sense on the part of a police officer. An officer should acquaint himself with the laws of the city and of the state which he is called upon to enforce. He should encourage peace and the public good. He should use his weapons only for defense and under no circumstances for provocation. He should seek commendation and advancement solely upon the basis of duty well performed.

The principal qualifications of a successful police officer may be summed up as common sense, obedience, bravery, truthfulness, fairness, sobriety, punctuality, freedom from brutality, from temper, from gossip, and from loafing.

**Report of Canton's Chief**

TOO MANY precautions cannot be thrown about the storage and use of gasoline in the opinion of Chief R. O. Mesnar, of the Canton, O., fire department. He recommends that every dealer in this material be compelled to furnish each customer with printed instructions governing its use. Many of the fires during the year were extinguished by means of the chemicals. Inspection of many buildings showed that they were in need of fire escapes and these were ordered by the State inspector of buildings. Inspection of houses and cellars by the Chief showed that they were in nearly all instances in condition to afford ample passageway for the work of the department.

The Chief again asks for two new houses for the rapidly growing section of the city. A new combination chemical engine and a chief's wagon are needed. The Chief recommends that an ordinance be passed requiring the members of the department injured in the service to procure certificates of disability from the city physician when they report off duty.

## WHAT POLICE AND FIREMEN ARE DOING

### Police Unionized—Standpipes for Modern Buildings—Objection to Civil Service Rules—No Firemen's Union at San Antonio—New Insurance Tax

#### Last Act of "Ripper" Legislation

TRUE to its reputation of "ripper" legislation and its accompaniment, the city of Pittsburg, Pa., has been treated to another shake-up in its police and fire departments. The new Recorder of the city, William B. Hays, on April 4, discharged 159 policemen and firemen. Had the Recorder waited another day, the "ripper" clause of the new charter would have expired and the men could not have been dismissed except upon charges. Assistant chiefs, lieutenants, sergeants, and privates were among the number "ripped" out of positions.

#### Police Department Unionized

THE epidemic of unionism has spread to the police department of Erie, Pa., and a union has been organized among the officers for the purpose of enforcing a demand for an increase of wages. The Council has been presented with the demands, which call for an increase of from \$60 to \$75 a month. If the Council does not grant their demands, it is probable that a strike will be declared. Carried out in the usual way, the strikers will endeavor to prevent new men from joining the force and the city will find itself in a serious predicament with no police force to protect it from robbery or disorder. As the men are organized under the Central Labor Union and have a charter, a sympathetic strike could be ordered to enforce the demands.

#### Work of Cincinnati's Department

THE report that Chief J. A. Archibald, of the Cincinnati fire department, has issued is most complete in giving information about his department that other fire chiefs desire to read. The financial report of the department is given, showing just what the department has cost the city. Then come statistics about each company, describing the apparatus and houses and giving the names, position, etc., of the men attached to each. A detail record of all alarms during the year is given, telling the story of the department's work. There were 1,192 alarms during 1902, of which 778 were still alarms. The reported loss amounted to \$1,007,575.92, on which \$684,184.44 in insurance were paid. The total expenditure for all purposes was \$497,782.37, and of this amount \$411,153.64 went for salaries. Three new engines were purchased during the year and a new aerial truck ordered to take the place of one destroyed at a fire in September. The only recommendation the Chief makes is that new companies be organized to afford protection in three districts where only temporary arrangements have thus far been made.

#### Scranton's Director of Public Safety Recommends

FOR proper protection to a city there must be one police officer to every 1,000 of the inhabitants, according to the report of Director F. L. Wormser, of the Department of Public Safety of Scranton, Pa. Therefore he urges that the department be increased gradually until this desired result is achieved. A reserve force was created in his department during the past year, and it has proved of great value. These officers can be sent to do duty at balls, theatres, and the like, and the regular force is not crippled thereby. He recommends that a new patrol wagon be provided to take the place of the one in use for fourteen years.

In the Director's opinion it is of the utmost importance to place the fire department on a full paid basis and that efforts should be made to accomplish this at the earliest moment consistent with the city's finances. He recommends an increase of \$5 a month in the salaries of the captains of companies and a similar increase in the salaries of the engineers. The salaries of the latter should be increased

until the maximum of \$75 a month is reached. He recommends that the city own the fire and police alarm telegraph now leased from the Gamewell Company. He wants a law requiring all street cars to give way to apparatus, police patrol and ambulance, and that they should reduce speed when approaching fire houses.

He reviews the struggle with the epidemic of small-pox. In his opinion there are but two ways to stamp out the disease: General vaccination and prompt and complete isolation of cases in a detention hospital. He asks that a municipal laboratory be equipped to examine material from suspected cases of contagious diseases and report promptly to the attending physician.

#### Generous Act of Fire Laddies

THE members of the Atlanta, Ga., fire department have come forward nobly in contributing to the million-dollar university which a committee is endeavoring to secure for the city. When Chief W. R. Joyner addressed the men, explaining the object of the project and requesting that the men contribute something toward the work, the firemen promptly decided to give \$20 each. This sum is to be paid in four years. The officers agreed to give \$30 apiece. In a short time the sum of \$2,500 was subscribed by the department and the men set an example which, if followed by other organizations or private persons in the city in proportion to their ability, will insure the success of the project.

#### Galveston without Police

IN the latter part of March the city of Galveston, Tex., found itself in a peculiar predicament. The sweeping decision rendered by the court of criminal appeals in a well-known case left the city without police protection. The constable of the district appointed the entire police force as his deputies so that the city would be protected. The county commissioners immediately confirmed the appointments. The attorney of the county advised the commissioners that they were authorized under the statute to take this action. Were it not for this prompt action, much trouble might have resulted. Any prisoner will be tried in the justice courts instead of in that of the recorder as heretofore.

#### Modern Buildings Should Have Stand-Pipes

THE fact that there have been no suspensions, dismissals or resignations from the fire department of Youngstown, O., during 1902, shows that the department discipline has been good. Only three reprimands were necessary. Chief William H. Loller recommends that a workshop be provided for the department, inasmuch as much of the repair work could be done by the men. They already do a good share of it now, but money could be saved the city if better facilities were afforded for more work. He recommends that the gravity battery be replaced with a storage battery. In the service of the department there are 8,200 feet of hose, of which 5,000 feet are in good condition. The Chief recommends that each company be furnished with 1,500 feet, which would enable them to load the hose wagons with dry hose each time. This will prolong the use of the hose. A forty-foot truss ladder and three pompiers ladders should be purchased. The hook and ladder truck should be supplied with a new life net. The Chief wants an ordinance passed regulating the stringing of electric wires and urges that the position of high voltage wires should be made known to the department. Three new steamers are necessary to enable the department to throw a sufficient number of good streams to cope with the average fire. He endorses the equipping of all modern buildings with stand-pipes and considers it the best method for fighting fires above the third floor.

**Salaries for Police of St. Joe**

THE "Duncan" bill, relating to the salaries of the police of St. Joseph, Mo., has been under consideration by the Legislature and will probably pass after the usual amendments were agreed to. The salary of the chief of police is placed at \$2,100 a year and of captains at \$1,350 a year. The bill originally provided for a salary of \$2,500 for chief and \$1,500 for captains. The sergeants shall not exceed two for each police district at a salary of \$1,080 per year and the secretary of the board shall receive \$1,200 a year. The police matron's salary is placed at \$600 a year and the police signal operators at "not to exceed" \$780 a year instead of \$780 a year as the bill originally provided.

**Changes in London Fire Brigade**

REGARDING the changes that are to be made in the fire-brigade of London, Eng., the *Municipal Journal* of that city remarks: "The chief idea in the reforms which are going to insure more efficiency in the London Fire Brigade is decentralization. Hitherto this vast wilderness of cities called London has been treated practically as one area, under the control of Captain Wells, except that since 1899 the second officer has had charge of the central district, as well as the command of the whole area in the first officer's absence, and has been in addition responsible for the brigade stores. All that is to be changed. The metropolis is now to be divided into three areas:—(1) north of the Thames, except that part in the central district; (2) south of the Thames, except that part in the central district; (3) central district. The divisional officers will be free for purely fire brigade work in their divisions. Captain Wells will directly supervise the work in the central district; the second officer, stationed at Southwark, will have the direct charge of the southern district and river stations; and the northern area will be in the charge of the third officer, stationed at Euston Road. A special stores officer will be appointed in addition."

**Department Is "First-Class"**

WHEN the improvements already under way are completed, Chief M. N. Eldridge is of the opinion that the fire department of Portland, Me., will be first-class. At present the department has five engines and hose wagons, a chemical engine, a combination truck and chemical, four ladder trucks, five hose wagons and a fire-boat. Two engines and two hose reels are held in reserve. There are also eight two-horse fuel and exercise wagons and six one-horse wagons. There are 17,000 feet of first-class and 10,000 of second-class hose, and he asks that 2,000 feet of hose be purchased this year. There are forty-one paid and 163 call men to man the above apparatus. In 1902 there were 249 alarms and the total loss was \$134,763.16, the loss on buildings being \$55,431.89.

**No Union for San Antonio Firemen**

DURING the month of March the firemen of San Antonio, Tex., quietly organized a union. Forty-five men were included and the temporary officers were elected. A permanent organization was not effected until the men had asked that committees of the Trades Council and City Council be appointed to confer with them respecting the advisability of continuing the union. Chief W. G. Tobin addressed the assembly and urged that the men do not form the union as the fire department was no place for one. Many of the firemen spoke for and against the project, the latter urging that the men wait until civil service was introduced or until a relief organization could be formed. Nothing but a local union should be formed anyway, as, if affiliated with any national organization, sympathetic strikes could be ordered. A committee of firemen was appointed to confer with members of the Trades Council. During the debate, Chief Tobin asked a delegate of the Council what action the Trades Council would take in the event of a fire while a strike was on. The delegate answered that he was in favor of letting the fire burn and that the men should not touch a piece of apparatus. That settled the question of a union and the men decided to take the Chief's advice and keep any such organization out of the department.

**Additional Apparatus Asked for Harrisburg**

A LARGE number of recommendations is contained in the report of Chief Lutz, of the fire department of Harrisburg, Pa. He asks that a high pressure fire-main be laid to the business section to enable the department to have an abundant supply of water in case of emergency. He also urges the passage of an ordinance governing the use and storage of gasoline and benzine. A map showing the streets, with the position of fire hydrants and water mains, would be valuable to the department. A lot of new apparatus is desired by the Chief. This includes a third-class steamer, a platform truck to carry apparatus to the outlying districts on the lines of the traction company, a supply wagon, a fifteen-foot hook and ladder truck for service up-town and a chemical engine having two sixty-gallon tanks for the business sections. He recommends an ordinance for the proper cleaning of chimneys and their proper construction and that of elevator shafts. During the past year the department answered 126 alarms. Of this number 123 fires were confined to the buildings in which they originated, and 117 to the floors. The total loss amounted to \$98,853.74. Of this loss, \$643.37 was on buildings and contents where the fires did not originate.

**Civil Service Rules Objectionable**

MUCH apprehension was caused the firemen of Portland, Ore., not long since because of the civil service requirements adopted by the Civil Service Commission. The troublesome requirements were in the physical rather than mental line, many of the men who had been in the department for years not being tall enough to pass. In the opinion of Chief Campbell and the Portland Board of Fire Underwriters, the requirements for the fire department as regards the old men have been sufficiently met by them in fire-fighting during the last few years. "Experience in fire-fighting," says the Chief, "is what makes men valuable. To know how to perform their duties, to possess nerve and courage, are the essentials required more than all other things in firemen." The Fire Underwriters protested to the Commission against the adoption of any rules that would debar any of the old and experienced men from the department. While there was no objection to enforcing such rules in future additions to the department, the present members should be exempted. Inasmuch as the department was a call one, no rule should be enacted that would in any way reduce the efficiency of the department.

**Great Reduction in Fire Loss**

AN interesting report has been completed by Fire-Marshal Hollenbeck, of Ohio, on the work of his department during the past year. A comparison of the figures on fire loss, etc., with those of 1901 prove instructive. The total amount of fire loss was \$5,555,399 and the total number of fires was 5,914, on 1,223 of which no loss was reported. There was an average number of sixteen fires each day and the daily average loss occasioned by these fires was \$15,220. There was a loss of seventy-one lives and the number of injured reached sixty. While the loss for 1902 was very large, it was \$5,641,850 less than that of 1901. This reduction extended to the large cities as well as to the small ones, it being over a half a million dollars less than that for 1901 in Cleveland, Cincinnati, Toledo and Columbus.

The Fire-Marshal urgently recommends that more care be taken in electrical construction, as many fires have resulted from poor electrical work. He considers it the duty of every municipality to provide for rigorous inspection where electricity is used.

The total number of incendiary fires was 222 and the loss was \$347,567. While this amount shows a large reduction over the previous year, as compared with the total loss of 1902, the percentage is much too large. Of the sixty arrests for incendiarism during the year, thirty-six indictments and twenty-five convictions were secured. The Fire-Marshal considers this a good showing when it is considered that there are less than 100 convictions for arson per year in the United States, that fifteen and six-tenths per cent. of all fires were incendiary and twenty-seven and five-tenths per cent. were of unknown origin and placed in the incendiary list.

Of the causes of fires, the defective flue claims a large share (738). Gasoline was responsible for 470 fires and much suffering and loss of life due to lack of knowledge in handling or from carelessness from long association.

**Old Hand-Engine Put in Service**

A RELIC of the old days when the volunteer fireman was in his glory has been resurrected at Lafayette, Ind., by Chief Harrisson and is again ready to do duty as of old. This is an old hand-engine used back in the '40's. The old engine is made of mahogany and is in an excellent state of preservation. The last fire at which it did duty was in 1869. After that the steam fire-engine took its place and the old fire-fighter was relegated to a corner of a stable, where it remained until Chief Harrisson rescued it from oblivion. The old engine bore the name of "Good Intent," which was later changed to "Quickstep."

**Inefficiency of Glasgow Fire-Brigade**

For some time there has been much dissatisfaction with the fire-brigade of Glasgow on the part of the fire insurance companies. They claim that the department has not given the protection that should be accorded from a well-equipped brigade and the losses that have occurred have cause the underwriters to jump the rates, in many instances from twenty to two hundred per cent. higher than formerly. The manufacturers have complained bitterly about the advance, which handicaps them in competition with other concerns located in municipalities where the rates are much lower. The actual experience of the companies, however, has justified the raise in rates. The rate reduction lies wholly with the property owners, who should see to it that the proper fire protection as regards water supply and inspection is afforded. The Chief of the department has complained of the erection of high buildings, but the heavy losses have not occurred in these. A proof of the inefficiency of the brigade is given by an expert. On a calm night a fire was permitted to jump across a street forty feet wide and destroy both sides of it at a loss of \$500,000. Numerous complaints have been made to the fire-brigade committees, but little has been done to remedy matters. Complaint has been found with the pressure in the mains, which has failed at the critical moment, at times the water not rising above the first story. The insurance rates will not be lowered until measures are taken to prevent the large and apparently unnecessary loss from fire.

**New Insurance Tax in Minnesota**

THE Legislature of Minnesota has passed a bill increasing the insurance tax for the benefit of the firemen. Every fire insurance company must make a yearly statement of the amount of cash premiums received from each city, town or village having an organized fire department. The clerk of every city, town or village must certify to the existence of an organized fire department in his municipality, giving the number of engines, trucks, hose-carts, feet of hose, companies, character of water supply, etc. The State Auditor at the end of each year must deliver to the treasurer of each municipality mentioned a warrant on the State Treasurer for an amount equal to the total amount of the existing two per cent. tax so paid by such fire insurance companies upon the premiums received by them in any such municipality. The city, town or village treasurer shall then set aside this amount received as a specified sum to be paid out only for the following purposes:

First—For the relief of sick, injured and disabled members of any fire department in such city, town, village or other municipal corporation, and their widows and orphans.

Second—For the payments of pensions for long service to retired members of any fire department in any such city, town, village or other municipal corporation of the State pursuant to the provisions of Chapter 55, General Laws of 1897, which are hereby re-enacted.

Third—For the equipment and maintenance of the fire department in any such city, town, village or other municipal corporation.

If there already exists a fireman's relief association in any municipality the money shall be paid to the treasurer of said organization, who shall report to the State Auditor and treasurer of the municipality what disposition was made of the money. No substitute fireman, fireman on probation or fireman not a member of the relief organization shall partake of the benefits of this money, and the treasurer of the relief organization shall give a bond to the organization for faithful performance of his work. The relief organization must have the sanction of the council of the municipality and

the public examiner shall have the right to see the books and accounts of the organization if complaint be made that the money is not being spent in the proper way. The Governor shall prevent further payments to the organization, if the complaint be true, until the money wrongly spent is returned.

**Fire and Police Personals**

—Mayor McLean, of Mobile, Ala., has appointed John Case chief of police.

—The police commission of Bessemer, Ala., elected R. F. Mims chief of police of that city.

—The Councils of McKeesport, Pa., have re-elected William Hardy chief of the fire department.

—David H. Cale has been elected chief of the volunteer fire department of Shenandoah, Pa.

—Chief John K. Hunter has been re-appointed by Recorder Wyman as head of the Allegheny, Pa., fire department.

—At a meeting of the Council of Nome, Alaska, in the office of Mayor Valentine, John Brannen was chosen as chief of police by an unanimous vote.

—The Council of Niles, O., has confirmed the nomination of A. I. Orr to be chief of the fire department, to fill the vacancy caused by the death of Chief J. W. McBride.

—Carl Goff has been appointed chief of police of Topeka, Kan., by Mayor Bergundthal. There were many candidates for the position and some of the law and order league were opposed to his selection.

—The reappointment of Chief William P. Flannagan to the head of the fire department of Exeter, N. H., has met with the approval of the citizens. Chief Flannagan has been in the service since a boy, and has served three years as chief of department.

—The term of office of Chief Sydney R. Carter, of the fire department of Evansville, Ind., ceased on April 15, and he was succeeded by Captain Dunlevy, of hose company No. 2. Chief Carter may take charge of this hose company to please Mayor Covert.

—Chief Thomas F. Price has been unanimously re-elected chief of the Mobile, Ala., fire department. He was first appointed to fill out the unexpired term of Chief Matt. Sloan, who died on October 8, 1901, and has handled a number of severe fires with success.

—The re-election of Chief Thomas E. Murphy to the command of the fire department of Canandaigua, N. Y., places him for the third time in this position. He has been a member of the department for years and has performed good service in his management of the department.

—Charges were preferred against Chief of Police Fred Pfister, of Racine, Wis., by the chairman of the police committee of the Council. The charges alleged corruption and inefficiency in office, but were not signed by the other two members of the committee. An investigation was instituted and a trial will be held.

—Chief W. E. Roberts, of Denver, has been forced out of office as head of the fire department. It is alleged that politics has had to do with his dismissal. Assistant Chief Terry Owens has been appointed in his place. Chief Owens has been a fireman for years and is entirely capable for his new position.

—George A. Sheets has been elected chief of police by the Council of Salt Lake City, despite much opposition. It was maintained that his confirmation by the Council was not legal, although Mayor Thompson and City Attorney Nye are convinced that the action of the Council would be upheld in any court to which the opposition could take the case. It is unlikely that such will be done, however.

—Due to relentless persecution on the part of City Comptroller Johnson, of Rochester, N. Y., Chief James Malcolm recently tendered his resignation to Commissioner of Public Safety Gilman. Chief Malcolm has served fifty-one years in the fire department of Rochester and nine years as chief. Chief Malcolm has risen through all stages to the position of chief, but for two years past all his actions and the conduct of all fires over which he took control have been subject to harsh criticism by the Comptroller of the city. Comptroller Johnson has appeared at most fires, assuming to give orders to the firemen and afterwards criticising the Chief for incompetency, although Mr. Johnson has never served a day as a fireman.

## LITERATURE ON MUNICIPAL TOPICS

### Reviews of Some Important Books—What the Magazines and Reviews Have to Say About Civic Affairs—Municipal Reports Received

#### Books

A book that will be read with interest by all public officials is the report on public baths and public comfort stations, made by the Mayor's Committee of New York City. While this report was transmitted to the Legislature of the State in 1897, it will always be an interesting one because it deals not only with what has been done in this line in the United States, but also shows the progress made in Europe to make the lives of the people in the poorer sections of cities cleaner and happier. Numerous illustrations are given of the baths and comfort stations in different cities, and the cost of construction and maintenance of them.

Under the authority of the City Council of Butte, Montana, Messrs. Edwin M. Lamb and Harry Bolinger compiled the ordinances of the city, including such laws and provisions of the constitution of the State as relate to municipal corporations. The work is well indexed and marginal annotations render it easy to find any part of an ordinance desired. The book contains over 700 pages.

*The British Fire Service* is the subject of a small pamphlet by T. G. Dyson, Chief Officer of the Fire Brigade of Windsor, England. This little book is a summary of the historical development of the English fire department, with a concise account of the laws relating to, and the means adopted for, fire prevention and fire protection. In a small compass Chief Dyson has packed in a lot of facts that are of interest all over the world. He concludes with a few remarks on fire insurance in England, including the different rates for various risks.

*The Practical Operation of Sewage Purification Plants* is the title of a short pamphlet by John W. Alvord, Sanitary Engineer, Chicago, on this important subject. He mentions some of the reasons why the art of sewage purification is laboring under disadvantages and points out some of these disadvantages, such as expense, physical unattractiveness of the system, termination of expert supervision a short time after the installation of the plant with the consequent mismanagement by others, the tendency to over-confidence on the part of engineers and those putting in the plants. There is a well-spread idea that a septic tank, once installed, can take care of itself, but this is not so and results in dissatisfaction with the system. The work of the tank is not well understood. Proper regulation of the tank will appear in the results obtained and the size of the tank should be adapted to the quantity of the sewage to be taken care of, a too large tank allowing advanced decomposition to take place with the result that after treatment is impossible.

Mr. Alvord warns against the analyses that are published for advertising purposes. A whole theory of the percentage of purification which a plant has been doing is built up from a few samples. Another falacy often misleading is the determination of results from any plant in percentages of the organic matter in the original sewage. A heavily polluted sewage may be easier to clear of bacteria than one not so polluted.

The subject of contact beds is taken up briefly as well as intermittent filtration and then the author describes several plants that he has put in operation, and how little they have been cared for after installation with resultant obnoxiousness at times.

The report of Mr. Columbus O. Johnson, Ex-Water Registrar of New York City, has been issued by the Merchants' Association of New York. Mr. Johnson was sent by the Merchants' Association to investigate the water departments of the largest cities of England and the Continent, and this report contains the results of his

investigations. He has wisely refrained from commenting too freely on the conditions he found, confining himself to bare statements of fact, which will permit unbiased judgment on the part of the readers of the report. Of the 289 pages of the report less than one hundred are devoted to the conditions of the water departments of cities, the remaining pages being taken up with tables of water rates, sample forms of bills for water, reports by various committees and different phases of their work and balance sheets showing the way accounts are run in different city departments.

One of the purposes of sending Mr. Johnson to Europe was to learn the means taken by cities there to check the waste of water. Most of the English cities rely upon the Deacon Waste-Detecting Meter system, although a large number of meters are in use. It is doubtful if the American public would tolerate such a method, coupled as it is with a system of inspection utterly foreign to American ideas of freedom from too much control by the government. The house meter system would work to better advantage all around. Such of the American meters as have been tried in England have held their own with those of foreign manufacture. The Merchants' Association has earned the gratitude of all students of municipal work by spending so much money in collecting the data in this report, and for a long time it will prove to be a most valuable book of reference on the subject of a water supply.

*Chemical Technology, or Chemistry in Its Application to Arts and Manufactures* is the subject of an admirable work edited by Charles E. Groves and William Thorp. Volume IV., which we have before us, is devoted to *Electric Lighting*, by A. G. Cooke, and *Photometry*, by W. J. Dibdin. Respecting the first portion of this volume, on electric lighting, the author does not claim to cover the whole subject, but has put together a connected and fairly complete account of electric lighting that may be of interest to specialists connected with electrical industries. It is a résumé of the various systems, machinery, lamps, etc., that are in use for the supply of electric lighting. The author has endeavored to make a readable treatise as well as a work of reference, and has simplified formulæ by reducing them to the minimum of all minor corrections necessary to professional exactness. The examples of certain manufactured articles are chosen for description only in so far as they expound the principles and not because they are supposed to be the latest and the best.

The second section, devoted to photometry, has been treated in the same way as that of the preceding section. A full description of existing and proposed standard methods of determining the intensity of artificial illumination is given, and the author urges the necessity for an international agreement on a standard of light. The work contains 373 pages and is well indexed. The price in cloth is \$3.50 net and can be obtained through the MUNICIPAL JOURNAL AND ENGINEER.

Another of the useful little handbooks on American government is the *Government of Maine*, by William McDonald, LL.D. It takes up the history and administration of the State government and forms a reference book for not only the student, but for all who desire information on the government of the Pine Tree State. It is especially valuable as a work of reference because the author has kept out of the text many unimportant details that often spoil what otherwise would be books of value.

Naturally, the first chapter deals with the early history of the State, including the colonial development and the main events within the borders during the Revolution. The second chapter brings the history down through the Civil War to 1880. Having thus outlined the history of Maine, the author takes up the main purpose of

the work—namely, the organization of the government. The constitution, form of government and powers of the State are given in the third chapter. The executive, legislature and judiciary of the State form the topics in Chapter IV. Local government is treated in the next chapter, and in Chapter VI. we find the methods of nominating and electing officers. Chapter VII. is devoted to "The Administration of Justice," Chapter VIII. to "Education," including the historical development, organization and management of the schools and academies, and Chapter IX. to "The Protection and Comfort of the State." The last takes in the militia, charities, labor, correctional institutions, public health, etc. The last chapter deals with "Revenue and Expenditure" of the State, showing what taxes are collected and how the money is spent.

There are four appendices devoted to chronological tables, excerpts from select historical documents, an outline of the State government, and statistical tables of population, etc. Copies of this work can be secured through the MUNICIPAL JOURNAL AND ENGINEER.

#### Periodicals

THE April issue of the *Good Roads Magazine* contains an account of the annual convention of the Eastern Ontario Good Roads Association, held at Ottawa in March. The Texas State Convention on good roads was also described. *Highways: Their Business Management* was contributed by J. O. Sanford, State Highway Commissioner of Vermont. New York, N. Y. Price, \$1 a year; 10 cents a copy.

The *Journal* of the New England Water Works Association for March contains several papers and discussions of interest to municipal authorities. H. W. Clark, Chemist of the Massachusetts State Board of Health, contributed an article on *Removal of Color, Organisms and Odor from Water*, showing experiments that were made by his board along these lines. *The Duties of Municipalities Regarding Water Supply* was from the pen of Hon. J. O. Hall, one of the points made by the writer being the need of an abundant supply at all times. In the discussion of the paper it was pointed out that many people confuse an "abundant" supply with the unlimited use of water, the amount of water wasted being a large percentage of the amount supplied. Allen Hazen presented a paper on *The Physical Properties of Water*, describing a standard method of measuring color of water and a small pocket turbidity stick to ascertain the turbidity of water. *The Relation of Water-Works Engineers to the Fire Service of Factories* was contributed by Edward Atkinson. This issue of the *Journal* contains the *Standard Specifications for Cast-Iron Pipe and Special Castings*, which is also issued in pamphlet form and sold at 10 cents the copy. Boston, Mass. Price, \$3 a year; \$1 a number; issued quarterly.

The issue of *The Municipal Journal* for March 27 contains an account of the housing scheme at East Ham, giving illustrations of the houses erected for the workingmen and cheapness of the rent compared with the pleasant dwellings and conveniences available. An account of the anniversary celebration of the free public libraries at Manchester appears in the issue of April 3. An account of the proposed *Sewage Disposal Commission* is given in this issue. This would be a central authority with subsidiary boards. London, Eng.

A review of the *Municipal Situation in Chicago* is contributed by Professor Harry Pratt Judson, of the University of Chicago, to the *Review of Reviews* for April. The author explains the peculiar position of the city, showing how handicapped it is by the State Legislature. The revenue is not adequate for the needs of the city's progress and cannot be enlarged until the Legislature permits it to adopt a higher rate of taxation. The traction question is taken up and then is presented the political situation as regards the election for Mayor, which has since resulted in a victory for Mayor Harrison. *The Municipal Voters' League* is touched upon. In the author's opinion, Chicago needs legislation that will permit of needed public improvements; a unity of purpose in the different branches of the

city government, so that all could work together for the common good. New York, N. Y. Price per year, \$2.50; per copy, 25 cents.

*An Investigation of the Properties of Brick under Different Physical Conditions*, by Sherman M. Turrill, was the leading paper in the *Proceedings of the American Society of Civil Engineers* for March. This gives the results of a number of tests to show the tension, bending, twisting, compression, etc., properties of brick under natural conditions, of bricks filled with water and of reheated bricks. The results seem to point to reheated brick as the best kind to use, although the expense is greater, as fully 12 per cent. of them are lost in the process. The use of this extra amount of natural brick would no doubt be cheaper and give as good results. Natural brick and brick filled with water show about the same results. An informal discussion on *The Preservation of Materials of Construction* is printed, nine members of the Society having given their views on the subject. A most interesting discussion is given on *The Sanitary Disposal of Municipal Refuse*, in which John McGaw Woodbury, Street Cleaning Commissioner of New York, took part. The discussion involved the use of street sweepings, ashes, etc., for filling-in purposes. Commissioner Woodbury stated that, as far as he could control, no more New York refuse should be dumped at sea, not only on account of the dirtying of the beaches, but also because of the great waste of good material from which the city could and is deriving a large revenue. The ashes are being used for filling-in, the garbage is burned and the refuse is sorted over, for the privilege of which \$110,000 a year is paid the city. Mr. Ball discussed at length the various uses to which refuse is put, calling attention to the danger of using street sweepings for filling in on account of the putrescible matter, and also declared against allowing the tearing down of old buildings unless the refuse was disinfected and kept wet at all times. Mr. Haswell discussed the disposal of sewage. New York, N. Y.

#### Municipal Reports Received

OUR thanks are due to Secretary Caulfield, of the Board of Water Commissioners of the city of St. Paul, for the twenty-first annual report of the Board. We have also received copies of the annual report of the Board of Water Commissioners of Bradford, Pa., for 1902; of the thirty-sixth annual report of the Water Commissioners of Middletown, N. Y., for 1902, and of the annual report of the Water Board of Lawrence, Mass., for 1901.

We are indebted to Chief M. N. Eldridge for the annual report of the fire department of Portland, Me., for 1902.

Chief William H. Loller, of the fire department of Youngstown, O., has favored us with the annual reports of his own of the police department of Youngstown for 1902.

Chief W. R. Joyner has kindly sent us a copy of the annual report of the fire department of Atlanta, Ga., for 1902.

The annual reports of the boards of health of Detroit, Mich., and Lowell, Mass., have been received, as well as the sixteenth annual report of the State Board of Health of Ohio for 1901.

Mr. Arthur A. Adams, superintendent of streets and sewers of Springfield, Mass., has sent us his report for 1902.

The compliments of City Engineer Charles M. Slocum, of Springfield, Mass., accompany his report for 1902.

Mr. Albert E. Winchester, general superintendent of the municipal electric lighting plant of South Norwalk, Conn., has sent us the report of the Board of Electrical Commissioners for 1902.

We have received the fourth report of the Sewerage Commission of the State of Connecticut for 1902. Accompanying it is a large map showing the areas supplied with water, areas supplied with water and having sewer systems, and the potable water supplies of the state.

Mr. William Allen Veach, secretary of the Central States Water Works Association, has favored us with a copy of the proceedings of the sixth annual convention of that body.

Part 3 of Volume VI. of the proceedings of the convention of the American Park and Outdoor Art Association, held at Boston last year, has been received. This part is devoted to "School Garden Papers."

## REVIEW OF MUNICIPAL REPORTS

### Halifax Finds Road Roller Invaluable—Water Meters Have Prevented Waste—Antitoxin Reduced Mortality From Diphtheria

#### Use Portland Instead of Natural Cement

DURING the past year but .45 miles of pavements in Syracuse, N. Y., were asphalt and 1.85 miles brick. Believing that better results would be obtained, the specifications were changed by substituting Portland cement concrete for the natural cement concrete. The result has been that, while prices on pavement were expected to be higher than the previous year, in some contracts the prices were lower. Heretofore considerable trouble has arisen over the grading of streets. It has been the practice to wait until the street is about to be built before fixing the grade, with the result that often houses are built before the grade is fixed and changes have to be made later. City Engineer Schnauber recommends the passage of an act giving the council power to order grading of streets without the permission of property owners. In some streets it is impossible to get a petition through until a large share of the lots are sold and houses built. Consequently, while the council has power to order sidewalks, if the street is not graded a permanent grade cannot be given for the walk, and complaint is often made when a change in the latter is necessary. On many streets there are fine rows of shade trees which would be ruined if the sidewalk grade was changed to conform with the street, therefore the city engineer recommends that property owners ask for a sixty or seventy-foot grade in the street in place of the present width of 100 feet and the sidewalks could then be moved to the grade portion and the remainder terraced to the property lines.

#### Road Rollers Revolutionized Road Construction

The street cleaning of Halifax, N. S., is not done to the satisfaction of City Engineer F. W. W. Doane, but this is only because the streets are not cleaned often enough. The principal streets are kept fairly clean by section men sweeping constantly and the paper cart patrol, but the smallness of the appropriation does not admit of adequate cleaning of 102 miles of street paving. The department of works has been using a Studebaker sprinkler on one of the old carts, and it has done so well that the department will abandon all the old sprinklers and adopt the Studebaker pattern.

The stone crusher has been extensively used in preparing stone for the streets. The stone broken up at the crusher costs from  $3\frac{3}{4}$  to 4 cents a bushel. One steam roller has been in use since 1891 and the work performed by it and another that has been recently purchased, has "revolutionized road-making in and about the city." The City Engineer thinks that two rollers are necessary as one cannot keep up with the road repairs and broken stone should not be allowed to lie loosely on the streets. When the frost comes out of the ground in the spring, two rollers are necessary to roll the surfaces smooth before wagons cut the paving up.

Mr. Doane has been criticized because he had the mud removed from the old stone before placing new stone on the road. It has been characterized as a waste of money, but, as the fundamental principle of road making is drainage, the water must be allowed to drain through the road and not be absorbed by mud, to freeze and cause upheaval of the surface. The results of such work is seen on old streets where the new metal has not been bonded well with the old material.

The City Engineer thinks that many of the resident streets are too wide, and that, if twenty-foot roadways were made, there would be twenty-foot walks, ten feet of which could be sodded, the maintenance of the sod not being nearly as expensive as that of the twenty feet of roadway.

The question of a municipal electric light plant has been under consideration for several years and a resolution was passed in February, 1901, for a site for such a plant.

The two public baths proved popular and their maintenance cost the city \$831. As in many other cities, the waste of water in Halifax has caused much worry on the part of the engineer. The cause of the

whole trouble lies in the lack of a proper system of controlling the consumption and all stringent ordinances seeking to regulate the use of water will be of no avail until meters are introduced. The City Engineer recommends: That premises shall not be charged more than the minimum water rate where meters are placed unless the quantity of water consumed would amount to more than that sum; no extensions to be made on the high service supply except through meters; meters to be placed on all new high service pipes and where the waste has not been stopped on second inspection. The use of meters has demonstrated the fact that waste stops where they are installed. The consumption, in one instance, being reduced from 1,400,000 to 12,000 gallons per month after a meter had been placed.

#### Recommends Meter System

The operations of the municipal water and light plants at Greenwood, S. C., are shown by the last report of the superintendent, A. J. Sproles. The cost of the plant up to January 1st, 1901, was \$52,358.70. At that time the Council wiped out the outstanding indebtedness and to pay for fuel and other supplies allowed the sum of \$140 per month for arc lights and fire hydrants. This was a departure from the former custom inasmuch as these two services were given to the city free. The plant maintains sixty-five 1200-candle power open arc lamps and eight 32-candle power incandescent lamps on the streets and supplies the public schools and cemetery with water and the rest of the town with fire protection. For this service \$1,680 a year is collected from the Council. Compared with what the water company would charge for the same service a balance of \$5,270 is given in favor of the city plant by the superintendent. From this, of course, must be subtracted the interest on the bonds. The rates for water and light are low but the superintendent is of the opinion that complete meter systems for both services would result in a further reduction of the cost of maintaining the plant.

#### Experiments With Sewage and Water Filters

THE State Board of Health of Massachusetts has been doing most valuable work in seeking to guard the health of the towns and cities of the State. Its annual report is a volume of over 600 pages, 114 of which are devoted to "advice to cities and towns." This section is especially valuable to other cities of the country inasmuch as the questions solved by the Board for the various cities asking its advice, are, in many instances, such as are asked by cities outside of Massachusetts. The Board made numerous examinations of water supplies of the municipalities and the results are given in tabulated form. Frequent examinations of the rivers used for public water supply were also made. The State has thirty-three cities and 320 towns of which all the cities and 134 of the towns are provided with water supplies.

Mr. Harry W. Clark, the chemist of the Board, contributed a report showing the experiments that had been made upon the purification of sewage and water at the Lawrence experiment station. The character of the effluents of filters of coarse materials is discussed and the effluents of contact and intermittent continuous filters are compared. The experiments with septic tanks are explained and the results given in tabular form. The purification of the water at the Lawrence experimental station is also taken up. Mr. Clark also contributes an account of his studies of the stability of the effluents of sewage filters of coarse materials. Mr. Stephen DeM. Gage reports on the bacteriological studies of water made at Lawrence station.

The distribution of antitoxin serum for diphtheria, which the Board has made free to all, has been of inestimable value in keeping down the mortality from that disease and enabling it to be used among the poor as well as the rich.

# POINTS OF A FIRST-CLASS WATER METER

**A Plain Talk About the Making of Water Meters—Essential Qualities—How One Company Secures Results**

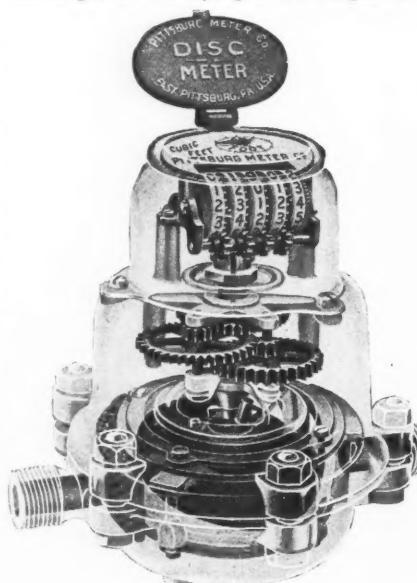
*By Our Special Correspondent*

The use of water meters is becoming so general, and their advantages are now so well understood by all water works officials that it is no longer necessary, as it once was, to demonstrate by uncontrollable proofs their many superior features as applied to the sale of water by exact measurement instead of by the so-called "flat rate" or "guess" system.

The question uppermost in the mind of the progressive water works superintendent or manager is not, as formerly, "Are meters a benefit?" That has been demonstrated over and over again to the satisfaction of even the most skeptical, but the current query is: "What meter will give the best service under all conditions, taking into account cost, accuracy, sensibility, durability, simplicity and freedom from repairs?" all essential characteristics of a satisfactory water meter.

As in all forms of machinery, there are real advantages to be considered, and also what might be termed merely "talking points," the latter often looming up much larger and carrying more weight with the uninitiated when selecting a meter than the former, but in the final test—that of actual service—the true merits or defects of a machine will come to light, and many a "talking point" that was clothed in language so technical and complicated as to awe the purchaser into believing he was getting a very superior article, dissolves into thin air when subjected to actual conditions and leaves the defects of design and construction in such plain view that he who runs may read.

The true worth of a meter cannot be demonstrated by catalogues full of technical verbiage, nor can it be proved by elaborate diagrams, theoretical arguments, etc., etc. Fortunately, however, there is a practical and conclusive method by which each one can determine to his own satisfaction the respective merits or demerits of any make or type of meter, and after having made such a trial, all the technical language in the dictionary will be of no avail in convincing the man who has "found out for himself" that the machine that had miserably failed when put to the test of practical service



was the best one for him to adopt, no matter how great had been the previous array of theoretical arguments in its favor.

The same thing is true of the so-called short time tests to which many water departments subject meters in order to determine which one is best suited to their needs. These tests often differ so widely from the conditions met with in actual service that after the water department has chosen the meter making the most favorable showing, it is frequently found that the meter fails utterly when applied to the hard requirements of every day use.

In designing and building a water meter, the manufacturers should aim not to incorporate a lot of trivial and unimportant details in order to give it a distinctive type and appearance from all other makes, but on the other hand, their sole object should be to assemble in the simplest form every essential requirement of an accurate measuring device, eliminating all non-essentials and complicated parts, which, although appearing very attractive and useful in theory, have been found to be just the opposite in practice.

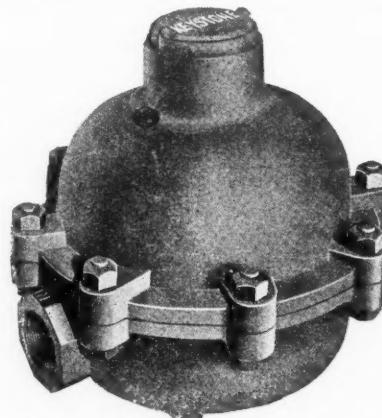
It is conceded by all those familiar with the subject that a water meter has the hardest task assigned to it of any piece of mechanism made, and a little reflection along this line will readily convince those who have never given the matter any thought of the truth of this assertion.

In the first place, a reliable water meter is expected to be as accurate as a watch, not only when new, but after years of continuous service, and when you come to think of the conditions under which the majority of meters operate, you will almost conclude that the manufacturers have undertaken an impossible task in even attempting to furnish an instrument for the correct registration of water of all kinds and for all purposes.

The conditions under which a meter has to work are as follows: After being received from the manufacturer, it is carefully tested for accuracy, sensibility, etc., after which test, if satisfactory, it is at once sentenced to penal servitude for an indefinite number of years, with no rest day or night, sometimes being "buried alive," several feet underground, or often being placed in some dark hole or corner of the cellar, rarely having the protection of a meter box, and what is still more rare, the benefit of any attention whatever, in the way of cleaning or adjusting. In this way the meter goes along year after year, measuring at times clear water, at other times muddy water, and not infrequently being called upon to measure watery mud, all with an accuracy that would be considered marvelous, if not impossible, in any other age than our own.

Every other machine has some one to look after it periodically and systematically, to oil, adjust and regulate, but the water meter is denied all such advantages and is compelled to be at its work constantly without either rest or attention twenty-four hours a day, and every day of the year, and if at the end of several years of constant service, the meter is taken off the line and tested for accuracy, great is the surprise of the officials conducting the test if they find the meter under-registers somewhat on the small flow.

It is evident that the requirements of a first-class water meter are, to say the least, more than those expected of any other machine of anything like a water meter's delicacy of action, and to the fact



that in their Keystone Water Meter, the Pittsburg Meter Company offers you a meter that will measure up to this high standard of meter efficiency, removes the only real and rational excuse that ever existed for not adopting the meter system, i. e., the inability to secure an accurate, reliable machine for the measurement of water to consumers, and at a reasonable price.

The Company is ready and willing to afford every facility for testing its Keystone Meter in actual service and to place at the disposal of all water companies and departments the benefit of the valuable experience and data relative to meters and their use which the Company has accumulated during the many years it has been engaged in the manufacture of meters.

The Pittsburg Meter Company is now building an addition to its plant at East Pittsburg, Pa., which will, when completed, about treble its capacity, the large addition being made necessary by the fast increasing business.

With the completion of this new addition to its factory, this Company will have the most complete and fully equipped plant for the manufacture of meters in existence, and in many respects it already possesses unique and unrivalled advantages of natural resources. To enumerate:

During the past summer the Company drilled in a gas well on its property, having a volume ten times in excess of its requirements; the surplus gas being disposed of to the other Westinghouse Companies in the immediate vicinity. This assures an abundance of the finest and cleanest fuel in the world and makes the Company independent of coal strikes and other labor troubles which interfere with the supply of fuel. Instead of this Company's fuel being an expense, it is a source of considerable profit; and from its nature, no men are necessary to handle it or keep up the supply, thus effecting no small saving in labor.

Westinghouse Gas Engines are installed in the factory, drawing their fuel supply from this gas well, and furnishing power to run the dynamos supplying the electric light, in addition to driving all the machinery used throughout the works.

Two deep artesian wells have been sunk inside the power house, from whence an abundant supply of pure, clear water is drawn, sufficient for all purposes, including the large amount used for testing water meters.

A "Hot Dipping Plant" is in full operation, in which the iron castings used in the meters are treated by being heated to a high temperature and then dipped in an equally hot solution of asphaltum, which closes the pores of the iron, and makes it impervious to rust or corrosion from the action of foreign substances in the water lines. By this improved method of treating the castings while hot, the solution applied does not scale off as is the case under the regular way of applying the asphaltum to the cold castings or in galvanizing.

Another recent improvement is the addition of a well equipped brass foundry, which is now in successful operation and kept running to its utmost capacity in order to turn out the large number of castings used by the company in the manufacture of meters.

Being located on the main line of the Pennsylvania Railroad, the Company has the very best shipping facilities. A private side track runs into the factory, permitting of the loading and unloading of cars at any desired location, and doing away with all expense incident to cartage to and from depots.

#### Use of Steel Lath Recommended

A GROWING interest in and appreciation of cementine construction brings out inquiries as to methods pursued by architects. Exterior concrete construction necessitates a use of metal lath which is either applied to wood studding or steel channels—by the use of staples in the former case and wire in the latter—or after the application to the wood studs of wooden sheathing in the usual manner and the use of waterproof building paper on the sheathing, the lath is applied after fastening furring strips over the paper.

The styles mentioned here have been well tried under various climatic conditions in the United States, and found durable and suitable. Herringbone expanded steel lath has been found especially well adapted to this class of work. The horizontal rib makes it rigid, and therefore, it has the good bracing qualities essential in

a frame building, particularly where no sheathing is used. As to details, architects differ, but all agree that the cement used shall be high-grade Portland. It is also quite necessary that the sheathing be dry at the time of application of the cement—in fact it is best to have the frame structure perfectly dry until application of first coat to the lath. The nature of the work would determine as to the necessity for more than two coats of plaster.

The specifications of one architect, who has been successful with this class of work, read: "The first coat shall be half lime and Portland cement, second coat pure cement and fine crushed stone or clean washed pebbles. Pebbles are dashed against the house with a small iron shovel." Another architect specifies: "Two or three coats of good hard plaster follow, the last coat being light and consisting of high-grade Portland cement mixed with sharp sand—the mixture being rather rich—from equal parts cement and sand to one of cement and two of sand." Some architects stipulate that the second coat be applied while the first coat is only partially dry others that the first coat shall be well dried. Results have been satisfactory after both methods.

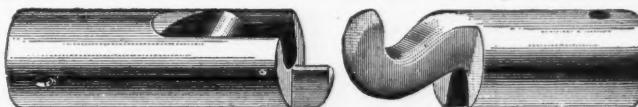
The construction with use of sheathing in its first cost, is very little more than the ordinary frame type and maintenance, less. As compared with brick or stone wall, the cost is much less.

Insurance companies in their classifications, place exterior concrete laid on wood sheathing, with brick veneered walls.

The Herringbone expanded steel lath is manufactured by the General Fire-Proofing Company, of Youngstown, O.

#### Improved Couplings for Sewer Rods

THE accompanying illustration will interest the readers of the MUNICIPAL JOURNAL AND ENGINEER for the reason that it clearly shows the advantages of the Felton coupling, used for connecting rods. It is a unique and valuable method of connecting sewer and conduit cleaning rods and can be utilized for cleaning underground pipes of every kind. It is easily and quickly adjusted, and said to be the least liable to get out of order, and the most practical coupling on the market. Special attention is called to the latest improvement, consisting of a tenon on one of the parts, and a cor-



responding recess to receive it in the other. This improvement serves two purposes: First, it insures accurate alignment of the parts, and second, it gives double strength to the hook, rendering it capable of bearing any twisting strain that may be given to the rod when in operation. Rods thus connected cannot be separated in the pipe and there are no threads to get battered. Full particulars and price list may be secured by applying to Harold L. Bond & Co., 140 Pearl street, Boston, Mass.

#### Withdrawal of the Silsby's

It will be news to all connected with fire protection in this country to learn that Messrs. Chas. T. Silsby and Wm. S. Silsby have disposed of their interests in both the American Fire Engine Company and the International Fire-Engine Company, which controls the former, and have severed their connection with these well known concerns. The name of Silsby, however, is inseparably connected with the progress of steam fire-engine manufacture. Mr. Chas. T. Silsby has been in the business over thirty years, being formerly treasurer of the Silsby Manufacturing Company, Seneca Falls, N. Y., which was absorbed by the American Fire-Engine Company, and at the time of his retirement was the treasurer of the International Fire-Engine Company, and president and treasurer of the American Fire-Engine Company. Mr. William S. Silsby, his brother, has been closely identified with the manufacture of steam fire-engines also for more than twenty years, and was formerly secretary of the Silsby Manufacturing Company.

The first Silsby steam fire-engine was manufactured in 1856 by H. C. Silsby, father of Chas. T. and Wm. S. Silsby, who is still living in full vigor, and is eighty-six years of age. The manufactory at Seneca Falls, N. Y., was founded by him in 1845 and has been in continuous operation ever since.

### Expanded Metal Lath

WHEN there is concerted effort on the part of the executive and legislative departments of city governments in the United States to improve the present building laws, there will be something upon which may be based a reasonable hope that the dimensions of the annual ash heap may be materially reduced. The MUNICIPAL JOURNAL AND ENGINEER has repeatedly called attention to the rigid rules and regulations which prevail in English and European cities, whereby their fire losses have been reduced to the minimum. Some of the larger American cities, such as New York, Chicago, Philadelphia, and Boston, have made some improvement, but there is ample room for still greater progress.

It is gratifying to note the rapid increase in the use of fire-proofing materials also the rapid development of devices which are calculated not only to add strength and durability to buildings of all kinds, but also the fire-proofing quality. The accompanying illustration shows one use of a fire-proof material known as the Imperial Expanded Metal Lath. This is manufactured by the Imperial Expanded Metal Company, of 1538 Monadnock Building, Chicago. It was specified for use by Louis H. Sullivan, architect, in the con-

intercommerce among cities, the municipalities through which it passes would suffer in consequence. But the best is none too good for this perfect specimen of what a modern railroad should be in all its appointments and uses. It takes into consideration even the whims of its passengers, seeks to alleviate even the fancied discomforts of the hypercritical, reduces the possibility of accident to the minimum by its system of double tracks and in every way endeavors to please. Thus the discomforts of life are eliminated and it makes it not only easy but pleasurable for the person who travels from Buffalo to Chicago, while furnishing him glimpses of the most pleasing waterscapes and landscapes.

Full information about the famous Lake Shore Limited can be secured by applying to A. J. Smith, General Passenger and Ticket Agent, Cleveland, O.

### The Asphalt Trust in St. Louis

IT seems that the account which the MUNICIPAL JOURNAL AND ENGINEER gave in its April issue of the working of the asphalt trust in St. Louis, was not quite correct as to detail, and for that reason the following communication from the Warren Brothers Company, of Boston, making correction, is published:

"In your issue of April, you have an article headed 'Asphalt Trust Beaten in St. Louis,' which, in effect, gives the facts, but in detail is quite erroneous. The litigation in St. Louis was between William H. Swift, president of one of the trust companies, and the city of St. Louis.

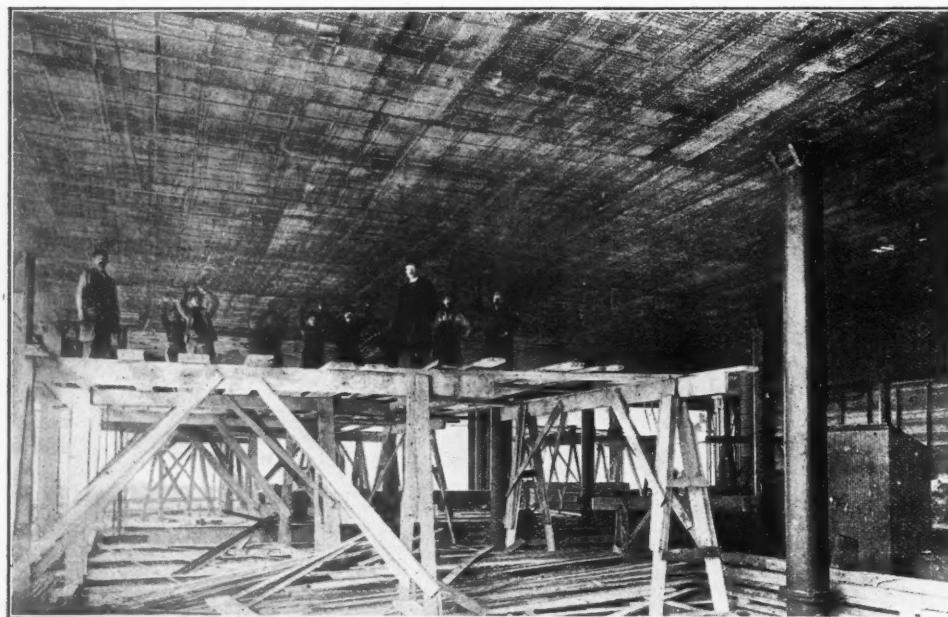
"The question of the Bitulithic Pavement was only indirectly involved. The city, in filing the answer, did not set up patents as defense. The complainant alleged that the Puritan brand of cement was no different or superior to any other brands of bituminous cement and the city simply contested that the forms of the specifications were accurate and legal and that it could not get a bituminous cement of the quality equal to the 'Warren's Puritan Brand,' except by specifying the same. The patents were not involved in any way, the Court simply holding that the law required the city to adopt a specific pavement, and that the Warren's Puritan brand of cement was the only material which had been established of good quality for the purpose and that the city was

therefore justified in specifying this brand to the exclusion of all other grades of bituminous cements."

### Notes of Interest About the Trade

—THE Engineering Agency, 1208 Monadnock Block, Chicago, was started in 1893 by F. A. Peckham, at that time Western Manager of the *Engineering News*. Mr. Peckham found, in traveling about the country, that he was constantly asked by manufacturers where they could find certain competent help. On the other hand, his office was visited every day by those who thought his paper might be able to assist them to positions. The Agency has grown steadily and during the past ten years has secured positions for over 5,000 technical men. The registrations during the past two years have exceeded 3,000, and yet to-day the Agency has difficulty in securing enough competent men to supply all of the demands made upon it by companies that wish high-grade help. Every person who registers in the Engineering Agency is obliged to give a complete record of his past experience, and if the Agency thinks that the experience is not satisfactory, it refuses to permit the applicant to register; if it does accept the registration fee, but finds, upon investigating the references, that he is not such a man as the Agency wishes to recommend, it returns to him promptly the registration fee.

—The new officers of the Stanley Electric Manufacturing Company, of Pittsfield, Mass., elected at the recent meeting of the board of directors, are as follows: President, W. Murray Crane, Pittsfield,



EXPANDED METAL LATH BEING PLACED IN POSITION

struction of the Schlesinger & Mayer Building, at the corner of Madison and State streets, Chicago, which is one of the most valuable corners in the "Windy City" and owned by Marshall Field. Fifteen thousand yards of this lath was used in the construction of this building alone. If such material were oftener used in the construction of commercial and civic buildings there would be less work for the fire department to perform. Now that American cities are conceded to have the best trained and most efficient fire departments in the world, they should take the next step in advance and by wise laws and municipal administration produce the best fire-proofing conditions in the world. When this is achieved an enormous expense for the maintenance of fire departments, not to mention the annual fire losses, will be greatly diminished.

### How the Railroad Helps the City

THE modern city would be an impossibility without the assistance of the modern railway. The cities, towns and villages which border the southern shore of Lake Erie could not exist, at least in the enjoyment of present day comforts, if it were not for the benefits derived from the Lake Shore & Michigan Southern Railroad. These municipalities are the more thrifty and prosperous because the Lake Shore stands on a level with the most perfect railroad in the world. If it were inefficiently managed, poorly equipped, careless of the comfort of the passengers, heedless of the demands of the

Mass.; first vice-president, Dr. F. A. C. Perrine, Pittsfield, Mass.; second vice-president, M. D. Barr, New York City, N. Y.; third vice-president, S. N. Hammill, New York City, N. Y.; treasurer, W. W. Gamwell, Pittsfield, Mass.; assistant treasurer, R. S. Murray, Pittsfield, Mass.; secretary, W. S. Westover, New York City, N. Y.; assistant secretary, A. G. Davis, New York City, N. Y.

—The H. Mueller Manufacturing Company, Decatur, Ill., maker of water, gas and plumbers' goods, is sending out to its friends what is often referred to as a "loose leaved Testament," being a pack of cards in a neat leather case, suitable for traveling purposes. It is presumed that an application to the firm for one of these "Testaments" would be honored.

—The Allis-Chalmers Company, at the last meeting of its Board of Directors, held in New York last month, declared its quarterly dividend of one and three-quarters per cent. on preferred stock. It was announced at the same time that the volume of business now on the books of the Company far exceed that of any time since its organization, notwithstanding the already large increase in the output.

—The Pittsburgh Meter Company, of East Pittsburgh, Pa., has issued a neat little catalogue with handsome cover, the only title on the cover and title pages being: "Fifty-four Car Loads." The reader learns further on, that during the last six months this Company has shipped over fifty-four car loads of Westinghouse gas meters to various natural gas companies throughout the United States and Canada.

—The Kelley-Springfield Road Roller Company is sending out from its New York office, St. Paul Building, 220 Broadway, a neat little pocket memorandum book. This contains also some attractive advertising of the famous road roller made by this concern. The memorandum book can be had by sending to the above address.

—"The Road of Anthracite," the D. L. & W., has issued an illustrated and attractive booklet telling about the modernizing of a trunk line. Full information about time tables, etc., can be secured by applying to the General Passenger Agent, 26 Exchange Place, New York City.

—The Art Metal Construction Company, of Jamestown, N. Y., has issued a small illustrated price list and catalogue, descriptive of card indexes and cabinets, giving the imprint of its New York office in the New York Life Building.

—The General Fire-Proofing Company, of Youngstown, Ohio, has recently issued a beautiful catalogue dealing with its all steel furniture and filing equipments.

—The steam pile hammers manufactured by the Vulcan Iron Works, 59 Milwaukee avenue, Chicago, Ill., are fully described in a neat, illustrated 16-page catalogue with cover.

—The Studebaker Brothers Manufacturing Company is continually issuing attractive catalogues. The latest one to reach the MUNICIPAL JOURNAL AND ENGINEER is No. 217, dealing with sprinkling wagons. It is profusely illustrated, showing numerous outfits owned and operated by various street cleaning departments throughout the country.

—The asphalt repair plant purchased from Robert Hooke of Chattanooga, Tenn., by the city of Binghamton, N. Y., is performing very satisfactory work. Alderman Charles W. Fetherolf, chairman of the City Council's Asphalt Repair Plant Committee, said that the Hooke portable plant recently put in fourteen and one-ninth yards of asphalt at a total cost of \$14.00, or a trifle less than one dollar a yard. Of the amount expended \$11.43 was for labor, \$2.00 for wood and 57 cents for oil. It is expected that when the men become familiar with the work the repairing will be done at from 75 cents to 90 cents per yard.

—The Plunger Elevator Company, of Worcester, Mass., reports the following among its recent sales: Two passenger elevators with a travel of 103 feet and one freight elevator with a travel of 114 feet, for the Victoria Hotel, Broadway and Twenty-seventh street, New York; four elevators, car travel 114 feet, for the State Mutual Life Insurance Building, Worcester; six elevators with a travel of 125 feet for the new building of the State Mutual Life Insurance Company, of Boston, and a car lift with a travel of 25 feet and a capacity of 60,000 pounds for the car barn of the Worcester Consolidated Street Railway Company.

## TURNING OVER A NEW LEAF

The Empire State Express of the New York Central, like all other institutions in the Empire State, forms new resolutions at the beginning of each year, and this train often keeps them more faithfully than do some persons.

January 1st, 1903, just to open the new year in good shape, this famous train ran from Albany to Buffalo, 302 miles, in 295 minutes, and didn't think much about it.

On this trip the train made the following phenomenal run between Syracuse and Rochester. These figures are taken from the Train Dispatcher's official sheet, and indicate the wonderful strides made in the acceleration of trains by the new and improved motive power as embodied in the latest Central Atlantic type of passenger locomotives.

From	To	Miles	Min.	Av. miles per hour
Syracuse	Syracuse Junc. Tower	2.16	6	21.60
Syracuse Junc.	Jordan	13.97	11	76.20
Jordan	Port Byron Tower	7.74	7	66.34

Port Byron	Savannah	7.05	4	105.75
Savannah	Clyde	6.09	5	73.08
Clyde	Lyons	7.07	7	60.60
Lyons	Palmyra	12.93	11	70.50
Palmyra	Macedon	7.29	4	109.35
Macedon	Rochester	15.47	16	58.01

Total run 80 miles, an average of 67.60 miles per hour.

This run was made by engine 2929, newest of the Central Atlantic type, which is the latest product of the American Locomotive Company. This engine came out of the works at Schenectady only ten days before making this run.

On the above date the train left Syracuse thirty-one minutes late. The engineer was Frank Hannum, the fireman Charles E. Lamkins.

The 20th Century Limited of the New York Central, notwithstanding the fact that bad weather has interfered somewhat with all trains, has made remarkable time during this winter, and has earned the title commercial men generally give it, of the "20th century time saver."



## LATEST NEWS FOR CONTRACTORS

### Bids Wanted for Municipal Work—Franchises Granted—Contemplated Improvements—Contracts Awarded

#### PAVING

Great Barrington, Mass.—Asphalt block will be used for paving Elm street. P. A. Russell.

Lynn, Mass.—It is probable that the sum of \$2,000,000 will be appropriated for highway improvement and construction.

Somerville, Mass.—The expenditure of \$50,000 has been recommended for highways and sidewalks.

Ansonia, Conn.—The grading of three streets is talked of.

New Haven, Conn.—\$6,500 will be spent for improving Cedar street which will be paved with crushed stone.

Brooklyn, N. Y.—The King's Highway will be improved. Commissioner Redfield.

Nyack, N. Y.—Main street will be paved with asphalt.

Seneca Falls, N. Y.—The road between here and Waterloo will be improved.

McComb, Miss.—Bids will soon be asked for brick sidewalks.

Louisville, Ky.—An annual appropriation of \$10,000 for assisting the property owners in repairing the streets is not unlikely.

Paducah, Ky.—Bids will soon be asked for paving to the amount of \$15,000.

Ada, O.—Main street will be paved, for a distance of one mile, with standard pavers.

Bryan, O.—Considerable paving is contemplated here.

Delaware, O.—Brick will probably be used for the paving of Winter street. Steubenville, O.—Bids will soon be asked for some brick paving. City Clerk Trainor.

Bluffton, Ind.—Bids will doubtless soon be asked for gravel road construction.

Frankfort, Ind.—Plans will be prepared for paving on two streets. City Engineer.

Union, Ind.—All the principal streets will be paved, brick being the material used.

Detroit, Mich.—Bids will soon be asked for sheet asphalt paving on ten different streets.

Goosepoint, Mich.—Bids will soon be asked for macadam paving.

Kalamazoo, Mich.—The paving of two streets has been ordered.

Milwaukee, Wis.—\$36,000 will be spent for paving on Commerce street.

St. Paul, Minn.—\$13,000 will be spent for paving on E. Third street.

St. Joseph, Mo.—All alleys occupied by the tracks of the Rock Island Ry. Co. will be paved.

Dallas, Tex.—\$17,000 is the figure estimated for macadamizing Ross avenue.

Galveston, Tex.—Bids will doubtless soon be asked for paving on two streets.

Ballard, Wash.—It is reported that Ballard avenue will be paved with brick, with cement sidewalks.

Tacoma, Wash.—Paving on three streets will soon be done.

Winlock, Wash.—The Cowlitz Pass road will cost about \$26,000.

Portland, Ore.—Washington street will be repaved with asphalt and artificial stone sidewalks laid, the total cost of which is placed at \$10,628.

San Francisco, Cal.—Basalt blocks will be used for repaving Third street.

Salt Lake City, Utah.—The paving of South Second street is being discussed.

Boise, Idaho.—It is probable that brick will be the material selected for paving on Eighth street.

Santa Barbara, Cal.—\$50,000 in bonds will be issued for Boulevard improvement.

Belvidere, Ill.—The estimated cost of paving State street is placed at \$43,100 by City Engineer Morean.

Ft. Wayne, Ind.—Plans and specifications are being prepared for about three miles of paving. City Engineer Randall.

Sioux City, Ia.—A resolution has been prepared for 20,000 feet of sidewalk to cost about \$12,000.

New Orleans, La.—The plans and specifications of the City Engineer for asphalt pavement on four streets have been approved by the council.

Portland, Me.—It is reported that the expenditure of \$15,000 for road improvements is under consideration at York Harbor.

Jackson, Mich.—\$5,000 will be spent for brick paving of alleys.

Detroit, Mich.—The following paving estimates have been allowed: Brick, \$345,079; cedar, \$60,202; block asphalt, \$92,665; sheet asphalt, \$66,610.

Newton, N. J.—Bids will be received May 4th for macadamizing about 8,945 feet of country road. Emmet H. Bell, Dir.

Johnstown, N. Y.—It is reported that bids will be received until May 4 for paving, the total estimated cost of which is \$25,183. City Engineer Miller.

Binghamton, N. Y.—Report says that \$35,000 will be spent this year for building new and repairing old sidewalks.

Watervliet, N. Y.—Brick paving for Seventh avenue is estimated at \$7,105 by the City Engineer.

Lisbon, O.—Bids will be received until the 5th of May for supplying material for improvements to Park avenue. Village Clerk Riddle.

Chattanooga, Tenn.—The building of one and one-half miles of boulevard in Chickamauga Park is being talked of.

Dallas, Tex.—It is stated that \$500,000 will be issued in county bonds.

Green Bay, Wis.—Reports state that \$65,000 will be expended for paving. Oshkosh, Wis.—Considerable asphalt paving is to be done this year according to reports.

St. Paul, Minn.—Bids are wanted for paving University avenue with asphalt and East Seventh street with brick. City Engineer Rundlett.

Kansas City, Mo.—It is reported that three county roads are to be macadamized by the board of county commissioners.

St. Joseph, Mo.—It is stated that Ashland road is to be macadamized this summer at a cost of \$15,000 and maybe other roads will be similarly treated.

Beaumont, Tex.—Bids are wanted on May 5 for asphalting or paving with brick on several streets. In all, 80,000 square yards. City Secretary W. A. Ives.

Galveston, Tex.—Plans for paving several streets have been made by City Engineer Dormant.

Los Angeles, Cal.—It is stated that asphalt will be laid on Pico street and that Grand avenue will probably be paved.

Amherst, Mass.—It is stated that about \$20,000 is to be spent on the road to Northampton.

Brookline, Mass.—It is reported that the widening of Harvard street will cost \$50,000.

Chicopee, Mass.—The sum of \$2,500 has been appropriated for the paving of Chicopee.

Cambridge, Mass.—Various streets are to be improved. It will cost \$10,000 to improve Monroe street.

Newburyport, Mass.—The paving of Ashland, Purchase and other streets has been recommended by the committee on highways.

Plymouth, Mass.—The council committee has recommended that the sums of \$3,000 for sidewalks and \$16,000 for roads be expended this year.

Westfield, Mass.—It has been estimated that the cost of asphalt paving Park square will cost \$25,700; with brick, \$22,500, and with macadam, \$7,000. Town Engineer Parks.

Canandaigua, N. Y.—It has been estimated that the cost of paving Main street with brick will cost \$151,940, and with macadam, \$118,416.

Pequannock, N. J.—Bids are wanted on May for the macadamizing of a portion of the Newark pike. Director Becker, Board of Freeholders, Morristown.

Shreveport, La.—It was recently voted to lay nine miles of asphalt pavement at a cost of \$533,000.

Alexandria, La.—Bids are wanted on May 12 for 19,000 square yards of asphalt, and 8,500 square yards of brick on Third street and 10,500 square of brick on Jackson street. Mayor F. M. Welch.

Newport, Ky.—It is stated that Orchard and three other streets are to be paved with brick.

Coshocton, O.—It is stated that the city will asphalt and sewer four streets.

Lima, O.—It is reported that East Lima street is to be paved with brick. City Clerk Ray.

Liverpool, O.—It is reported that the council has been considering the paving of Lisbon street.

Mountville, O.—The County Commissioners have been considering the paving of roads with macadam.

Marysville, O.—The reports state that North Wall street is to be paved with brick. Mayor Hamilton.

Ft. Wayne, Ind.—It is reported that 60,000 square yards will be paved this summer. City Engineer Randall.

Indianapolis, Ind.—Bids are wanted for 10,000 square yards of granite block and artificial curb.

Terre Haute, Ind.—It is stated that four and eight streets will be paved with brick.

Vincennes, Ind.—It is stated that two miles of brick paving has been ordered for the streets in the business sections.

Winchester, Ind.—The question of paving some streets with brick has been under consideration.

Detroit, Mich.—It is stated that Michigan avenue will be paved with brick in part at a cost of \$17,000.

Milwaukee, Wis.—Plans for asphalt paving on various streets have been made by City Engineer Poetsch.

Chicago, Ill.—The Illinois Steel Company has purchased thirty-three acres at Indiana Harbor, Ind., on which to erect a Portland cement plant to cost \$8,000. The new works will be known as the Buffington plant and will have a capacity of 4,000 barrels a day.

Pittsburg, Pa.—The United States Steel Corporation is building a cement plant in connection with the Carnegie works to have a capacity of 2,000 barrels a day.

Atlanta, Ga.—The Carolina Portland Cement Company of Birmingham will soon move its main offices to this city.